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DEVELOPMENT OF SOUTHERN INDUSTRY.

The South Carolina Institute for the Promotion of Agriculture, the Mechanic Arts, and Manufactures, has been in existence for several years. It has conferred advantages which have been felt not only in South Carolina, but in all the neighboring States. The Institute has lately constructed a most magnificent hall in Charleston, and opened it with a fair, rivalling in the extent and beauty of its fabrics any which has been previously held in the South. It is our intention to review in detail the list of contributions and awards of premiums, as we shall in regard to the fairs of other southern States. Space at this time will only admit of the opening address of the Hon. James L. Orr, which is marked with great ability, and will be read with interest by every class of our subscribers.

This is an occasion of lively interest to the city of Charleston, as well as to the State of South Carolina. The commodious building we occupy has been erected by their united liberality, and is now dedicated to developing the mechanic arts and the agricultural industry of South Carolina. Its giant timbers groan beneath the weight of their combined productions, brought and exhibited here as tangible proofs of superior skill in their varied departments, to contest the prizes offered by your liberality, and to stimulate still higher perfection in useful and ingenious labor. The mechanic is here, the artisan is here, the manufacturer is here, and here is the farmer and planter, and here, too, are the fair daughters of Carolina, the noble matron, and the blooming damsel, all are here to tender you their offerings of industry, of skill, of artistic taste. Their contributions not only charm the eye, but gladden the heart of all who feel a proper solicitude in the progress and permanent prosperity of our much cherished commonwealth.

The founders of this Institute have achieved a triumph which concedes their sagacity and public spirit, and may

justly congratulate themselves on the eminent success of their praiseworthy experiment, when they see around, arranged in faultless order, the various works, fabrics, and inventions, for supplying man's wants, and ministering to his comforts.

A new era has dawned on the productive energies and capabilities of South Carolina, and, through the determined enterprise of her patriotic citizens, she will go hand in hand with the foremost in this progressive advance in national development. May the sun of her prosperity never set.

Agricultural fairs, for a long while, have been no novelties in this country or in Europe, and the quality and quantity of its productions have doubtless been sensibly augmented by the knowledge imparted and the spirit of rivalry awakened among agriculturists. Within the last thirty years, however, the initiative has been taken in the United States of encouraging the mechanic arts by the organization of mechanic institutes, and adding to the exhibition and comparison of mechanic labor, lectures on such practical and scientific subjects as educated the artisan and mechanic in his profession. Wherever the policy has been adopted, the results have been most gratifying in the social elevation and enlightenment of this numerous and useful class of society, and we may confidently assume that Charleston and the State will be most bounteously rewarded for their patronage of this Institute in the professional, social, and intellectual elevation of the mechanic and the citizen in general.

Great Britain, at the World's Fair in London, has not only eclipsed all former exhibitions, but through her patronage of that fair has accomplished more in stimulating mechanical skill—in giving greater impetus to the inventive genius of her subjects, and in imparting thought and knowledge in the arts and agriculture, than all the acts of her parliament for half a century.

Her example was followed by this country, but with results far less satisfactory. And yet the Crystal Palace at New York has accomplished good. The paintings, statuary, and machinery, were visited by thousands; they were observed, studied, criticised, and many useful ideas were impressed on the elastic minds of our countrymen, which may in future be fully developed to the permanent advantage of this great country.

An imposing exhibition, after the London model, is projected for this year at Paris, under the immediate patronage of the emperor. It is not merely the pageant that prompts him. He has the sagacity to avail himself of the occasion, to spread out before his subjects their own productions of ar-

tistic and mechanical skill, and the finest specimens and models of ingenious workmanship in all countries of the civilized world. Will not the generous rivalry incited, and the information attained by his subjects, amply reimburse the small national outlay for its construction and inauguration?

Such facts prove the deep interest taken by these three principal nations in fostering and promoting every variety of mechanical industry, and nearly all the governments of society, as well as these, have manifested a like solicitude by conferring franchises on inventors, allowing them the exclusive use and monopoly of new inventions, by letters patent, for a series of years. Nor can their solicitude awaken surprise, when we consider the vast amount of labor employed, other than agricultural, in supplying the natural and acquired wants of the human family.

Dr. Ure, in his invaluable Dictionary of Arts, Manufactures, and Mines, defines operative industry to be "to produce, transform, and distribute all such material objects as are suited to satisfy the wants of mankind. The primary *production* of these objects is assigned to the husbandman, the fisherman, and the miner; their *transformation* to the manufacturer and artisan; and their *distribution* to the engineer, shipwright, and sailor." Mechanical labor enters into mining, and is eminently useful to the husbandman and fisherman in production; its transformation employs exclusively that species of labor; and its distribution, except the muscles and sinews of the sailor, and the winds of heaven, is likewise accomplished by the same labor. How important, then, is it to man that such an aggregation of necessary labor by one class should be directed by education, facilitated by science, stimulated by exciting generous emulation among its members, fostered by wise legislation, and patronized and encouraged by the sympathy and kind offices of the good citizen?

No service more acceptable to the State of South Carolina could have been rendered by her most sagacious and patriotic citizen than the organization of this Institute, the object of which is to develope a species of labor greatly needed throughout her limits. The meagre supply of mechanical industry is a serious impediment to our prosperity. We should possess it in such abundance as to have every want supplied in that department by mechanics residing among us, unless from some natural or adventitious cause it can be more cheaply produced elsewhere—and this distribution of labor is as necessary to advance agriculture as other branches of industry.

Do we now possess it? Who can answer affirmatively? In 1850, the artisans and mechanics numbered 9,993, whilst all other occupations amounted to 58,556, showing that less than one-fifth of our white population are engaged in this extensive branch of industry; and if the labor of our slaves be taken into the estimate, it may safely be assumed that less than one-fifteenth of all the labor in this State is thus employed. In New York, the artisans and mechanics number 252,747, and all other occupations 635,933, giving nearly one-third of her population to the mechanic arts—and let it be borne in mind that New York is a great *agricultural* State. In Maryland there are 38,010 artists and mechanics, and all other employments number only 86,866, showing that one-third of her entire white population are pursuing the mechanic arts. There is another comparison which the late census suggests. Maryland's population is 583,034, whilst that of South Carolina is 668,507. The improved lands in Maryland are 2,797,905 acres, in South Carolina 4,072,651 acres; the unimproved lands in Maryland are 1,836,445 acres, and in South Carolina 12,145,049 acres; and yet the remarkable fact is exhibited that the cash valuation of the improved lands in Maryland is greater than in South Carolina, although the quantity is less by nearly one-half. The valuation in the former is $87,178,545, and in the latter $86,568,038. This indicates a high state of agricultural prosperity in Maryland, which may well be emulated. What is in the soil or agricultural productions there so superior to South Carolina? There is a more judicious distribution of labor there, and her large city, Baltimore, has appreciated the value of lands by furnishing a ready cash market for agricultural products grown on them. It is the labor and enterprise of Baltimore mechanics that has swelled her area and wealth in a few years from a small town to a majestic city.

In 1790 the population of Baltimore was 13,503, and Charleston 16,359; in 1850 Baltimore had grown to 169,054, and Charleston to 42,985. At the period when this comparison commences the exports of Charleston were varied and valuable; the commerce she enjoyed more enriching; the interior country supporting her more fertile and extensive; her geographical position more favorable by reason of freedom from the competition of other cities; in all these respects Charleston had the advantage of Baltimore. Now their situations have changed, and Baltimore quadruples the population of our favorite city, and her commerce, tonnage, and prosperity have gone on increasing in the same wondrous manner as her population.

Why is it so? Let a stranger visit the two cities and he will assign you the reasons. He will first tell you that no great city can be built up simply by exporting great staples; she must give employment to other labor and pursuits than to commission merchants. She must have her artisans and mechanics. He will see in Baltimore extensive ship yards enclosing her harbor, hundreds of ship carpenters actively employed in constructing new boats and vessels, and in repairing old and crazy hulks, and perhaps whilst admiring the active industry of the scene around, he will discover a vessel sailing into port with ship lumber from Charleston. Baltimore ship carpenters are to realize all the profits arising from working the lumber. If a Charleston merchant desires to purchase a vessel for the foreign or coasting trade, he sends to Baltimore and pays the $50,000 demanded for it, when his own city has received for every stick of timber in it but $10,000. To whose support and gain does the difference of $40,000 go? How many ship carpenters would be employed a whole year on such a sum? What activity would be infused in every branch of business in your city if twenty such vessels were annually constructed in your own harbor? What would be the increased sales and profits of your retail traders, your grocers, your innkeepers, and provision dealers?

Why not do your own ship-building by your own carpenters? There is no natural barrier in your way. The season of your epidemic disease, should it return unfortunately every year, is shorter than the rigors of an inhospitable winter at Kittery, Portland, Boston, or New York, when labor is almost entirely suspended by their workmen. The lumber they use is taken from your wharves. Why not put the labor on it before committing it to the strifes of ocean, and build up and enrich your own mechanics? The stranger will see in Baltimore thousands of mechanics at their forges, furnaces, and foundries, in their shot towers, marble and stone yards, shops, and machine shops. Nearly every square supports its tall chimney with the black smoke issuing from the furnace of an engine driving machinery at its base. How many smoke stacks would the stranger count in Charleston? How many engines, propelling machinery, would he be able to enumerate? Was not the steam engine some years back a *mala prohibita* within the corporate limits of this city? How many carpenters at your ship yards, mechanics at your forges and foundries, and machinists at your work shops would he count? These hints furnish some of the prominent reasons why Baltimore has outstripped Charleston, and indi-

cate means of speedily and permanently promoting her languishing prosperity.

The demand for engines and locomotives is now imposing, and annually augmenting throughout the State. Engines are being extensively introduced for saw, merchant, and grist mills, as well as for various descriptions of machines to save or facilitate labor. Eight hundred miles and more of railroads traverse the State, and the locomotives used cost the companies not less annually than $150,000. Have you machinists enough in Charleston to execute supplies for the demand from all these sources? If you have not, strive to obtain them. How vivifying and refreshing to every industrial interest if the $250,000, annually expended abroad for engines and locomotives, could be retained at home to pay home mechanics?

It is unnecessary that I should point out other branches of mechanical industry, the examples given establish your greatest want; and until artisans and mechanics crowd your city, I fear that your hopes of a greatly enhanced prosperity are illusory.

In many localities in the country the deficiency in the mechanic arts is even greater than here, and with a less sufficient excuse for the delinquency. Town and village property, taxes, rents, and provisions are lower than in the city, and the climate is beautiful and salubrious—exempt from all malignant epidemic maladies—and yet some of our villages can boast of no higher attainment in the mechanic arts than the possession of a blacksmith who can shoe a horse and lay a plough, or a house-carpenter who can jack plank and saw lumber; and what is the result? In traversing the country we too often see huge piles of lumber thrown together without regard to convenience or comfort in light or ventilation; without symmetry and without consulting a single point of architectural taste or beauty, and the expense incurred by the builder equal to its construction and completion with neatness and even elegance. Unless some improvement is made in rural architecture, another order will be added to the existing list, which a synic might denominate the "Carolina," as descriptive of the locality of its origin. The dwelling places of the dead manifest the same absence of taste, care, and attention as those of the living. A church-yard is generally selected as the depository of the remains of the deceased. It is enclosed and is shrubbed out until the plat is covered over with graves; then commences an unpitying neglect—the paling decays and tumbles to the ground—the

briars and brambles spring up and become a covert for the hare, the fox, and the sepent! No stone rises to mark the spot where a loved one reposes. In private burial grounds the picture is even more revolting. The homestead passes into the hands of thoughtless, and, perhaps, heartless strangers; the enclosure falls, and time and season level the little mound. Soon it is forgotten that the dead sleep there; and over the bones of the once owner of the mansion, groves and broad fields around, cotton and corn grows. Oh! what desecration of the dead. The aboriginal savage marked by more enduring monuments the resting places of their loved dead. They heaped earth and stone together so high that ages did not efface the memorial, and all future generations trod lightly over the spot where the venerated sleeper reposed. Every town and village should have its cemetery—enclosed with substantial iron railing—laid out in plats and walks, and planted in flowers and evergreens, and some neat, simple monument be erected over every grave. This would be showing that respect and affection for the memory of the dead due by a civilized and christian people.

We must have architects and educated mechanics to improve the style of our buildings, and iron founders, marble yards, and stone-cutters to beautify and ornament the dwelling places of the dead.

The State is in want of additional manufactories, and I use the word in its comprehensive sense, to work by machinery, into forms convenient for use, all kinds of raw materials. Columbia is admirably located for a great manufacturing town. Water, the cheapest of all motors yet discovered, is furnished in the greatest abundance near the city, over the shoaly beds of the broad Saluda and Congaree rivers. An unlimited amount of machinery could be propelled, and a great variety of work and fabrics produced. It is easy of access by the railroad converging within its limits, and is placed, thereby, within a few hours of every description of raw material furnished by the State. Nearly all the upper districts are likewise prodigally supplied with water power. The streams have their sources in the mountains, and are fed by bold unfailing springs, yielding in their channels a uniform regular current, exposed neither to congelation in the winter nor to evaporation or absorption in the summer. This secures us a striking and important natural advantage over the northern and eastern States, for the severity of their winters freeze the streams and ice-bind their wheels so as to suspend for several months the working of all machinery driven by water, and, as a consequence, curtails profit by

suspending all labor depending upon such agency, to the detriment of the stockholder. Our operations may be continued the year through without any such interruption or drawback on the profits of the investment. The extraordinary low price at which water power may be purchased, being really little beyond the intrinsic value of the land usually annexed to it, should induce enterprise and capital to cover the base of every shoal in South Carolina with machinery for the extensive and economical manufacture of all useful fabrics and implements. If this picture could be converted into a reality, how many happy light-hearted mechanics, artisans, and machinist would find employment, and what new prosperity would be diffused within our borders? The answer may be found by estimating how much of our wealth—hard-earned wealth from the laborious tillage of cotton and rice in a soil once rich but now gradually impoverishing—is annually expended in remote sections for the commonest implements and utensils. Whence comes your axes, hoes, scythes, reapers, chains—yes, even your ploughs, harrows, rakes, axe and auger handles? Your linsey, brogans, blankets, and much of your domestics? Your furniture, carpets, calicos, and muslins? The cradle that rocks your infant to sweet slumbers—the top your boy spins—the doll your little girl caresses—the clothes your children wear—the books from which they are educated—the carriage you ride in, and the guns and fishing tackle you sport with, are all imported into South Carolina, and the products of the soil are borne away to pay for them. In despite of all this the State has prospered, but how much more exalted would have been her progress and improvement if her wants had been supplied at home by the labor of her own citizens? Growing towns and smiling villages would greet the eye. No gullied fields or dilapidated mansions would tell that agriculture languished, if we had wisely diversified labor. Can a policy so obviously at war with every precept of political economy, and so fatal to every principle of social progress, be longer persisted in? There is no natural obstacle to supplying ourselves with every article I have enumerated by properly directed labor in our own State. We have genius, education, industry, and the material; and if our citizens would estimate the advantages to flow from a changed policy soon, we would have capital seeking investment in practical manufacturing schemes. None others should be encouraged. I would not urge my fellow-citizens to establish an embargo on all foreign industry—to refuse to purchase abroad such articles and materials for use and pleasure as from soil,

climate, cheap labor, great skill, large experience, or other cause, could be obtained at a less cost than they could be matured at within our own limits. I would not controvert the sound political and social axiom "to buy in the cheapest and sell in the dearest markets." But I am for stimulating enterprise so as to make it our interest to buy at home, when there is no natural impediment in making the home market as good as any other. It inspires a sense of independence, and brings freighted in its train wealth, happiness, and contentment.

Some of the deficiencies of long duration are now being repaired by the active energy and enterprise of our citizens. Cotton manufactories are springing up, and stockholders who have secured prudent supervision of their establishments are now, and have for some years past, been realizing a greater per cent. on the capital invested than has been yielded by investments in agriculture. Experience and the enlarged skill it brings will certainly ensure even large dividends in the future. This branch of manufacture should be extended until the markets of the whole world are supplied with cotton and yarn and coarse fabrics, produced in the manufactories of the southern States. We are wanting in no single natural advantage to compete successfully with every rival. The cheap motor, a healthful, salubrious climate, mild and equable temperature, cheap building materials, an abundance of provisions and the raw material grown on the spot, are natural advantages we enjoy. What section of the earth combines such an extent and variety of advantages for the manufacture of cotton?

The transportation to market of the raw material is just as expensive as an equal amount of the manufactured fabric, but the pound of the latter brings into the country three times the amount of cash brought in by the former. Why may we not embark extensively in this branch of industry, with the positive assurance of our ability to undersell all competitors in these articles in every market?

Our experiments in manufacturing have crowned the hopes of their authors with gratifying success, and have illustrated genius and capacity of a high order in our mechanics. Paper-mills in various localities have been erected, and their fabrics reflect credit upon the operatives, and establish the triumph of the experiment. Much of the letter and cap paper used in the State, and most of the paper for the newspaper press in this and other southern States, is manufactured in South Carolina mills, and at a fairly remunerating profit to owners and stockholders.

The machine shops in Charleston are growing in popular favor. The finely finished machinery, such as engines and locomotives, turned out of the shops is the highest recommendation to the skill of your workmen, it is their best advertisement, they require no other eulogist of their merit, and the day is not far distant, I trust, when the last engine and locomotive shall be landed on a Charleston wharf, the necessities of the State being supplied by our own enterprising and industrious mechanics.

Your foundries here and in the interior are beginning to compete with older establishments in other States. Let them make a character by the elegance and durability of their works, increase their force and capital, press the enterprise with becoming energy, and they will be munificently appreciated by a discriminating public.

There is one branch of mechanical manufactures which, from its rapid advance and high perfection, is entitled to the special laudation of every friend of improvement. Thousands of dollars annually expended a few years back in New Jersey, New York, and Connecticut, for carriages and other wheeled vehicles, are now expended in our midst to pay domestic mechanics for the same work executed in their shops. Many of the towns in the State can bear testimony to the streams of prosperity turned in upon them by the establishment of such manufactories in their midst. If you doubt the skill of the mechanics engaged in this branch, look at the specimens on exhibition here. Will they suffer in a comparison with any model vehicles from any foreign shop in the elegance of finish, skill and fidelity in construction, durability of material, symmetry of model, or economy of cost? May I not go further, and challenge any foreign shop to produce a specimen equal to some now on exhibition here?

The multiplication of carriage manufactories in the State has not only diffused life and activity into many other departments of industry, but it has put wealth into the pockets of the proprietors, and has added to the comforts and pleasures of the people.

Twenty-five years ago, in the country where I reside, it was a rare sound to hear the rattling of carriage wheels at a country church. Occasionally, when a farmer had grown a little ambitious of display in making a "turn-out," or when his children were too numerous to be conveyed even by doubling on poor Dobbin's back, an old gig or a Jersey wagon was called into requisition, which always brought from his neighbors a critique on his pride or extravagance. That has passed away, and now the church-yard is crowded with

vehicles purchased by the owner from the manufacturer, and paid for by timber from his forest or surplus products from his farm. Both are benefited by the exchange, and society is elevated and refined by extending the personal comforts and exalting the tastes and aspirations of its members.

The extensive carriage manufactory at Greenville employs some fifty mechanics, and sells annually not less than seventy-five thousand dollars worth of work. The market which it furnishes to the various branches of industry in the district in its consumption of lumber, materials, provisions, &c., diffuses a prosperity in the district greater than is done by all the capital expended by our friends from the middle and lower districts in their summer excursions and residence in this beautiful mountain town. A dozen such manufactories, employed in making other articles of prime necessity now purchased abroad, would make every hill and every valley blossom with plenty, and every heart swell in happy content.

There are other branches of manufacturing industry meriting special commendation, which I must omit for want of time. Something has been done; but much, very much, remains to be consummated before that bountiful prosperity hovers over us, which it is our duty to woo and win to our embrace.

We want manufactories and machine shops—they co-exist together. We want enterprising, intelligent, inventive mechanics. We want them to increase until their labor will furnish us every machine and fabric for man's use that can be as cheaply matured here as elsewhere. How are these wants to be supplied? Let our citizens cease to expatriate themselves from the bosom and kind affections of our common mother, and devote themselves to the grateful task of fostering and warming the condition in which she now languishes. Let them not deceive themselves by the delusive hopes of sudden wealth in new and distant lands, and let them resolve that when "life's fitful fever" is over, that their bones shall repose side by side with their fathers beneath the native soil. Take it all in all, we have the best country which I have seen in the broad expanse of this great confederacy—let us be contented to occupy, and improve, and develop it. Providence has blessed us with every variety of soil and surface, climate, production, and resources with no stinted hand—let us do something worthy of the magnificence we enjoy, and bequeath to our children a heritage and country greater than we received from our fathers.

The first great step to be taken in the reformation of our habits, to re-invigorate our decaying prosperity, and to de-

velope our exhaustless resources, is for our planters and farmers to invest the whole of the nett profits on agricultural capital in some species of manufacturing; the field is broad and inviting, and but little has yet been occupied. With prudence and energy there can be no failure in any branch. A short experience will demonstrate that the investment is more profitable than it would be in agriculture, and it must continue so until the distribution of labor and capital, in all branches of industry, equalizes profits. It will be many years before the demands of labor and capital in manufactures will be met; and until that period arrives, manufacturing products must be predominant. Such investments must be made with bold confidence, and pressed with vigilant energy, to reimburse in the adventure. The absence of all experience in this department of industry has resulted in miscarriages in some sanguine experiments already made, and they are held up as beacons by the croakers to warn all others from venturing; but it will be found, on strict scrutiny, that miscarriages have been more common in agricultural investments that have been made and supervised by inactive and inexperienced men than in manufacturing enterprizes.

Our planters and farmers are even too timid when invited to make outlays of capital in anything new; and yet they carry their liberality even to prodigality in satisfying their own or the wants of friends. They spend their money in generous profusion to minister to their own or the personal comforts of those dependent on or attached to them, whether the attachment originates in consanguinity or friendship; but when they invest money it must be with a certainty that it will yield seven per cent. per annum. This timidity is a barrier to enterprise, and some useful lessons might be learned by them from our northern rivals. In some particulars the population of the north and east is misjudged in the south. They are a people full of enterprise, energy, industry, thrift, and economy. In personal expenditures their economy is so rigid that we often denominate it parsimony, and their chaffering over small sums implies a total absence of liberality. Their rule of life is to expend the smallest possible amount in purchasing ordinary comforts or pleasure—for when thus expended it is so much capital forever gone—and to invest their surplus gains in any and every conceivable scheme promising directly or remotely to bring profit or interest. Their enterprise and adventure is so great that no new *project* is too chimerical to secure for experiment an investment of northern capital. Hence you see the streams of New England and some of the middle States lined with

machinery. Their railroads surmount every hill and penetrate every valley. Their other public works, and all their public buildings, manifest the same indomitable enterprise and a spirit of adventure that hazards capital in every scheme. Their whole country, in all its length and breadth, is a monument to their industry and public spirit. They are shrewd in driving a bargain—so much so as to expose them to the imputation of disingenuousness. In their conduct they recognise the morality, and put into practice in trade. the old common-law doctrine of contracts, *caveat emptor*. Their public charitable institutions are high tributes to their benevolence. They husband dimes to invest or donate dollars. The inventive genius of her sons is fostered and rewarded by their willingness to try every novelty, and if it proves useful, ample compensation is reaped by the inventor for the new thought. Their investments oftentimes are profitless; and yet it seems to be no discouragement, it rather incites to other schemes promising reimbursement for past losses, and great gains from present risks. We transfer our surplus capital to distant States to grow more cotton and sugar, or, if it be retained here, it is represented by bonds and notes bearing seven per cent. interest. This was the habit of our fathers, and any innovation upon long established usage or theory is resisted—hence reforms of old habits prove a great labor to the reformer. It is time that it should commence. Individual and State interests require us to take a "new latitude and departure." The market for agricultural labor stagnates under a superabundant supply—the market for agricultural capital is satiated; and there is active demand for manufacturing labor and capital, a wise political economy teaches the necessity of their equalization.

When our citizens shall have embarked their capital in manufactures and machinery our State will rapidly fill up with artisans and mechanics, without whose presence and labor, I believe, no interest, even agricultural, can reach the maximum prosperity to which it is capable of ascending.

The idea was once prevalent with wrong-headed people that manual and mechanical labor was inconsistent with intelligence, gentility, and dignity of character. Most happily such an absurd sentiment is exploded in the minds of all sensible men and women. Labor is the tax upon all animated existence for its preservation. The ant, the reptile, the beasts of the field and the fowls of the air, all toil for food. Man, the master of them all, endowed with intellect, and created with appetites and desires to exercise and develope his capacious faculties, is bound also to labor, and to labor by

the omnipotent fiat of Jehovah. When our common progenitor was expelled from the green bowers of Eden, it was under an angered though just sentence that "in the sweat of thy face shalt thou eat bread till thou return unto the ground." Henceforward the spontaneous productions of the earth failed to sustain man. Can labor be disreputable since its requirements are univeral and its necessities of Divine origin?

The progress of civilization is constantly multiplying and expanding the demands upon labor, and the judicious means for increasing its products have engaged the thought and employed the invention of the wisest and best men in every age. Men are entitled to that respect and consideration from the community which their moral worth, intelligence, and usefulness justly inspire, without regard to the occupation pursued. The lawyer and physician labor, and oftentimes the fœtid air of a dark dungeon, or the nauseating odor of a sick room is more repugnant to the senses and sensibilities than any which the forge or machine shop emits. The educated youth who masters one or more branches of the mechanic arts, by study and application, has a personal independence and a prospect for the future, to be envied by the brother who has chosen a learned profession. That is an erroneous public opinion which gives to professional men rank and position of social and intellectual superiority over other occupations. The exclusive business of professional men is intellectual, and if they evince superior attainment within the line of their employment it is no more than they should accomplish. But to test the amount of intellect required in different occupations, which would require the most comprehensive understanding, the machinist who could construct a steam engine and adjust all its nice parts and apply its power to spinning and weaving, or the lawyer who could comprehend the rule in Shelley's case and expound the statute *de bonis?*

Ambitious fathers dedicate their sons to the learned professions, and many thus sent fall far below the fond anticipations of doating parents. They locate in a town or village, and hang their sign upon the "outer wall." Weeks and months roll on, and no patients or clients come; habits of idleness are contracted, and, with them, pleasure in dissipation, which soon ends in debauchery; then loss of self-respect—loss of hope—that last prop of the falling man—despair and ruin, crime and disgrace perhaps, till the sad *finale* is at length reached, when he sinks

> "To the low dust from whence he sprung,
> Unwept, unhonored, and unsung!"

The educated, skilful mechanic is always employed; he

receives and husbands fairly remunerating wages for his labor; he finds in his profession an ample theatre for the exercise of taste, invention, judgment, and every faculty of the proudest intellect; he crowns his house with comfort and his table with abundance. Is his domestic happiness and his usefulness to society to be compared with that of the briefless lawyer or the patientless doctor?

Young men in our State are commencing to realize that labor is reputable. When the graduates of a respectable institution sacrifice false sentiment and go to the machine shop to be educated in mechanism and enginery, as some have recently done, it furnishes the index of a healthful public opinion, and gives bright prospects of an increasing prosperity in the future.

The great desideratum now is to give dignity to mechanical employment by educating its members, not only in the use of tools and machines, but in physical science; teach them chemistry, mechanical philosophy, mathematics, engineering, architecture, and all knowledge necessary to prosecute all branches of their profession. This accomplished, we shall hear no more of their social and intellectual inferiority. There can be no inherent defects in any of the elements constituting the man where his labors show such varied useful triumphs as mark the pathway of the mechanic in ministering to the conveniences and comforts of civilized life. Their social influence has not been equal to their numbers or services in advancing the civilization of the race. Mechanics, now is the time to commence a reformation; push it on with your wonted energy; organize associations, not to regulate wages, but to buy libraries—to procure lecturers who may instruct you—to interchange thoughts during hours of leisure, and soon your influence will be as potent in the social and intellectual as it now is in the industrial and inventive world.

Distinction is the pet of no *one* occupation; every useful path in life is an avenue to power, and opens doors of conquest to him who has the moral courage to knock and enter. It has been nobly won by many of your brethren. Franklin, Watt, Fulton, Arkwright, Cartwright, Adams, Morse, and thousands more, have blessed mankind by their inventive genius, and given a bright page in history to their own great names. A gifted orator sums up your duties and responsibilities in the following beautiful language: "Respect your calling; respect yourselves. The cause of human improvement has no firmer or more powerful friends. In the great temple of nature, whose foundation is the earth, whose pil-

lars are the eternal hills, whose roof is the star-lit sky, whose organ tones are the whispering breezes and the sounding storm, whose architect is God, there is no ministry more sacred than that of the intelligent mechanic." With your genius and capacity, industry and usefulness, why may you not stand up and exact recognition of your perfect equality with the most favored and exalted class of your fellow men.

If the State cherished in its bosom intelligent mechanics in numbers, equal to supplying all our necessities, as I have presented them, new fountains of wealth would be poured out on every industrial interest. The population of our cities would rapidly increase, old towns would be rejuvenated, and new ones builded; the merchant's sales and customers would be extended, real estate appreciated in value, agriculture would no longer languish; it is no idle dream, the horn of plenty would be emptied on the land, and its refreshing dews would quicken and eliven its hills and vales, mountains and plains. Let us all unite cordially in fostering a profession which will beautify the country, enrich the citizen, develope the resources and magnify the greatness of our much loved and cherished Carolina.

The patronage of this institute is not restricted to manufactures and the mechanic arts, but wisely embraces in its purposes the promotion of agriculture, which now is and must continue the paramount industrial interest of South Carolina. It is the basis of all wealth. Its products, beyond the consumption of the laborer, becomes capital, a portion of which is expended in meeting the incidental outlays of production, and the remainder is the annual accumulated wealth of the husbandman.

I have, however, consumed already too much of your time to do more than glance at a few points in this great interest.

In proportion as it was developed in conjunction with manufactures and the mechanic arts in the empires and republics of antiquity, so was their power and influence felt and exerted on surrounding nations. The most celebrated of these empires had a feature in their systems of civilization precisely the same as exists in the southern States of this confederation, to wit: domestic slavery.

Egypt was celebrated for her agricultural productions; a sufficiency to supply home consumption and a surplus with which to emply a foreign commerce. Her progress in the mechanic arts would do no discredit to our epoch. Dr. Wilde, in his voyage to the Mediterranean, gives an interesting account of the open linen work found covering the mummies of Egypt as similar to modern Berlin worsted. "One

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pattern," he says, "represented roses with four petals, shaped like hearts arranged in lozenges, composed of buds of different colors, which cross the linen obliquely, and thus present the appearance of an embroidered net of many colors; three varieties of red, two blue, a white and a yellow. The linen ground dyed a nankeen color." This description almost rivals some of the beautiful specimens on exhibition here from the work tables of our own fair countrywomen. Egypt had her coins, gold chains, signet rings, coverings of tapestry, carved work, and glass-ware. Her jurisprudence, skill in the medical art, and in embalming the dead, are imperishable memorials of her learning, science, and advanced civilization. Her system of domestic slavery was not unlike our own—her slaves tilled the soil and performed menial services—they were bought and sold for a price in market overt. For centuries the empire flourished, and her power was recognized by the neighboring kingdoms.

Babylonia, an empire great and powerful among her cotemporaries, with fruitful agriculture, flourished for a succession of ages. She too had her system of domestic slavery.

Phœnicia rose rapidly in power and wealth, extended her dominions by planting colonies, tilled the soil with slaves, and carried on an extensive commerce. Tyre and Sidon, her principal cities, were the very cradles of the mechanic arts, and were, it seems, the birth-place of arithmetic, astronomy, and a taste for letters, which afterwards grew up into such magnitude, when transplanted into Greece. Phœnica, too, had her system of domestic slavery.

Carthage was a rich and powerful republic, engaged extensively in commerce and devoted to conquest. Her agriculture was restricted, and much of her supplies imported from Palestine. Her slaves tilled the earth and performed menial service for their master. Free Carthage, too, had her system of domestic slavery.

Greece, the land of Plato, and Socrates, and Demosthenes—the land of philosophy, poetry, and eloquence, around whose memory crowd so many classical associations—even free Greece was the home of slavery. A well-informed writer describes ancient Greece as "sufficiently fertile to reward toil; it was not so prolific as to support idleness. Varied in its character, it did not stimulate its inhabitants to one branch of industry alone, it invited the culture of all. One district was best suited to produce wine, another oil, and a third corn. Arcadia supplied pasturage for cattle; Thessaly was proud of its horses; the coast, indented with numerous bays and harbors, afforded every facility to navigation and commerce.

Greece was not exclusively agricultural, pastoral, or commercial, but she was all three together." In the meridian splendor of her power, greatness, and glory, with a refined civilization, which has excited the wonder and challenged the admiration of the world, she, too, had her system of domestic slavery.

The Romans, like ourselves, were a mixed race, which impressed on them a peculiar nationality. The power and resources of the empire were colossal in all their proportions. In the days of her might, her arts, her agriculture, her manufactures, her arms, her genius, philosophy, and eloquence, towered high above all rivals. She was, indeed, the "mistress of the world," and her name spread dismay in the countries of her enemies. In the pride and pomp of her power, she, too, had her system of domestic slavery, and her slaves outnumbered the free citizens of Rome.

In all these empires their slaves most generally were vanquished enemies. There was no distinction in color, features, and understanding between the master and slave, which exposed the institution to embarrassment, such as we are exempt from in the United States, Cuba, and Brazil. To control ancient slaves required more restraint, and, of consequence, a more vigorous discipline than we practice towards our slaves. The African slave has his *status* stamped by the Creator in indelible colors, he needs no badge or uniform to assign him his place when seen. The inferiority of his intellect is not less distinctly marked, he is dull and inapt in his perceptions, indolent in thought, sluggish in his movements, improvident in his habits, and feeble in his reasoning; and this inferiority, appreciated by himself, induces a prompt and cheerful submission to the authority of the master, with but little necessity to appeal to restraint or punishment. This makes the relation in modern times more acceptable to the slave, and less perplexing to the master.

I have collated this brief epitome of the history of some of the most celebrated empires and republics of antiquity, and noted specially their system of slavery, to prove from the record of history that the modern opinion held by many persons in the north and east that slavery is a political evil, by reason of the weakness, in a military aspect, entailed on the State, and that it is incompatible with the personal and mental development of the white man, is founded in the most palpable error. I need only point to this epitome to establish the fact that slavery presents no barrier whatever to the highest development and civilization of the master race. What would an old Roman have replied to the charge that slavery was an

element of weakness? He would have said that while Roman citizens were fighting the battles of the republic, Roman slaves were tilling the soil to support her armies and people; or if at peace, that the slave labored to give the owner leisure and means to cultivate philosophy, poetry, letters, and eloquence. With all her prating of philanthropy, has England, now an old empire, in her poetry obscured the genius of Virgil and Horace, or in her oratory eclipsed the splendid eloquence of Cicero? All the ancient precedents establish the fact, that slaveholding States are not only capable, but that they actually do attain the most exalted civilization enjoyed by their most favored and accomplished cotemporaries. Does our experience confirm the truth of these precedents? We have in the south more wealth *per capita* than the population of the north possess; we have as much virtue and as little crime; we, with a third less population, furnish more than a moiety of all the exports; and when our sons have met their's in the camp, in the cabinet, in the senate, or on the bench, have they not nobly maintained themselves, and borne to their countrymen as many trophies from all these theatres as the men of the north?

We have only to improve the means which the God of nature has showered in copious profusion all over this State to make our population affluent, independent, refined, intelligent, prosperous, and powerful.

In late years, new interest has been awakened in improving our agriculture. It is fortunate that apathy has at last been discarded, and that our planters have commenced to repair the breaches of former years. Our lands are growing old, cleared hills have been pierced with deep gullies, and many exhausted fields surrendered to the sedge and pine; and still there is no sensible diminution in production, and yet but for the improvement of husbandry in modern years our agriculture would have sadly languished. Something has been done, but much remains for the planter to do.

In former years, the strength of a rich virgin soil supplied, to some extent, the failure of good seasons and careful culture; but now, that soil is washed off, or has tired in the constant drafts on its strength. We must practice liberality to the earth, our most generous benefactress. If she had grown surly, and yielded to our labor in proportion to the aliment we have bestowed her, how many long years ago would we have been pinched with want and stricken with famine? She has, in the generosity of her nature, disdained to retaliate our parsimony, but, with a noble benevolence, has tasked her utmost energies to fill our granaries and

enrich our coffers. How can we, guided by the impulses of grateful hearts, longer neglect to minister to the wants of this disinterested friend who so steadfastly toils for our happiness? Nourish her with the food her appetite craves and she will reimburse you with no stinted interest. When she has grown weary, enfeebled by long and faithful service, let her rest. She will soon acquire new strength and vigor, and bear you on her generous bosom a teeming harvest. The enlightened donor is never forgotten when she scatters her bounties. Try it.

The pecuniary and personal comfort of the parties would be greatly promoted if the planters of this State were all transformed into farmers. That policy is most pernicious which prompts the planter to swell the number of his cotton bales, and sends him into the provision market to buy his provisions, and into the live stock market to buy the animals used and consumed on the plantation. It makes him merely the supervisor of cotton fields, to produce profits for the stock and provision dealers; for how little of the roll of cotton money is left to the planter when he has paid his merchant, his grocer, and the stock drover.

How much more to his interest, then, to produce all the articles of consumption which may be grown in his own climate and on his own soil? The provisions consumed in this State may be successfully grown in every district, and the first great care of the planter should be to raise his own breadstuffs, pork, beef, and mutton, and with equal care he should rear his own horses and mules for plantation use. System and personal supervision will render the task one of easy accomplishment, and it will be an immense saving of the money drain for plantation expenses. His cattle will furnish him milk and butter, and his flocks of sheep with mutton, as well as the fleece to clothe his workers. This policy would require a reduction in the number of acres planted in cotton, but if the policy could become uniform throughout the planting States, the reduction would entail no loss, the reduced crop yielding as large an aggregate as is now brought by full crops, but if loss should follow, it will be more than reimbursed in the falling off of plantation expenses.

The system, order, personal supervision, and care for small matters, which this change would initiate, will beget economy—a personal virtue which our planters do not, in an eminent degree, possess. The cultivation of a great staple, which can be readily converted into cash, disinclines the planter to look after the details of minor interests, which

being neglected, must be supplied by contributions levied on the staple crop. This being true, whilst the market value of the labor, producing only a great staple, is greater than the same amount employed in farming, the farmer amasses wealth more rapidly than the planter; and for this reason, in thirty years, the States of Kentucky and Tennessee—farming States—will be the wealthiest in the Union, not excepting Mississippi or Louisiana.

They send their surplus products to the south, growing staples and receive the cash. A portion of it is expended by them with the foreign and eastern merchant and manufacturer, the balance, which is by no means inconsiderable, remains with them, and is invested in public improvements, in building and decorating mansions, and in multiplying personal comforts. What disposition is made of the proceeds of the staple crop by the planter? The foreign and eastern merchant and manufacturer receives, in any event, as large a sum as the Kentuckian expends, but the planter's outlay does not stop there. All the pork and bacon, and much of the beef to support his workers for the year, must be bought and paid for, and not unfrequently the corn and flour aids in swelling the bill. His horses and mules are worn out or have died during the year, and their number is to be replenished for the next crop. How much of the proceeds of the staple crop remain to be invested in public improvements and personal comforts after this depleting, eastward and westward.

Our planters neglect the education of their sons in the business of planting, and too often have occasion to indulge in bitter regrets for this omission. How few of them on attaining their majority and being presented by a kind father with a plantation and hands are qualified for its judicious supervision? They know nothing of the culture of a crop—of what constitutes a day's labor—of seed time and harvest—of the feeding and caring for of their stock. They are deceived by their workers and duped by their overseers. A few years reveal to them the prospect of bankruptcy, and the overseer becomes the owner of the estates which he lately supervised. The original owner, the untrained and uneducated son, is less censurable than the overkind father, who neglected to teach him in his youth the practical duties of the business of life he was appointed to pursue.

But I cannot longer detain you in pointing out amendments to the domestic policy of South Carolina. I should have been gratified to have given you some thoughts on the culture of the vine and the manufacture of wines in the mid-

dle and upper districts; a new department in husbandry, which will certainly, at no distant day, absorb profitably much of the agricultural labor of the State, and also some thoughts on leveeing and draining the swamp lands of the lower districts, which would open to cultivation a vast area of lands whose fertility would compare with the valley of the Nile. I leave these and other topics to those whose experience and greater wisdom will enable them to entertain and instruct you more thoroughly than I can hope to do.

Mr. President and gentlemen of the Institute, my task is nearly ended. You have my contribution to this Institute over which you preside, "would it were worthier." I have attempted to enforce the conviction that our prosperity is absolutely dependent upon the judicious distribution of labor and capital—upon its diversion from agriculture to manufactures and the mechanic arts. My ambition on this interesting occasion has been not to indulge in the rhetoric of the orator, but to turn the attention of my countrymen, by practical suggestions, to the best means of stimulating and developing a new and vigorous prosperity. Examine these suggestions with critical caution; accept such as are founded on wisdom; reject those based on error, and do something to make Charleston, the pride of every true-hearted Carolinian, a great city—great in her commerce, great in her tonnage, great in her mechanic arts, great in her manufactures, and great in the number and enterprise of her inhabitants.

Do something to make South Carolina a successful rival to all her competing associates in the mechanic arts and manufactures, and build up for her a fame as honorable and enduring to the skill and genius of her sons in the industrial records of the historian, as that intellectual and patriotic fame which our fathers reared for her, and which now lights up so brilliantly every page of her history.

TEXAS AND HER RESOURCES.

The following sketch is from the pen of a gentleman who has been a citizen of Texas for more than twenty-six years, and was prepared by him for the pages of our Review. It will be followed by a series of similar papers upon this most interesting portion of the southwest. We invite such contributions from all sources.

Velasco is situated at the mouth of our great central river, (the Brazos,) on perfectly high and dry land, fronting both the Gulf and the river, with an elevation of surface securing it from inundations by the influx of the Gulf or the head waters of the river. These facts were demonstrated, first, by the freshet in the Brazos of 1833, when that river attained a

perpendicular elevation of water never before known; and second, by our last autumnal equinox, when the tides of the Gulf swelled to a height exceeding anything within the memory of man. This town is the only one (known to me) on the coast of the Gulf of Mexico, within the limits of the United States, perfectly secure from inundation.

I will now submit matter-of-fact statements in relation to the port and harbors of this town. There is near the mouth of the river a sand-bar, varying from four to eight feet depth of water over said bar. At present it is seven feet; which has been gradually increasing, from an average depth of five to seven feet, since the communication of the waters of Galveston bay and Oyster creek with the mouth of the river, by a canal for steamboat navigation. To what extent the depth of water on the bar may be increased by the late canal improvement is problematical. Of this fact, however, we are certain, that the increased quantum, and consequent increased pressure of water, at the mouth of the river can do the bar no injury.

This bar of which we speak, affording at present seven feet water, is situated about two miles from the immediate mouth of the river, and is only one quarter of a mile in width. After passing this quarter mile of shoal water there is within two hundred and fifty yards on the Gulf side five fathoms water; and on passing the said quarter mile from the Gulf into the river we find, at the distance of two hundred and fifty yards within the river, five fathoms water; thus affording to the town two harbors—one within the river as safe as a dry dock, after entering; the other in the gulf, with holding-ground for shipping unsurpassed by any in the world, and sufficiently capacious for the whole and full accommodation of all the shipping of the world; extending (as it does) from the west pass of Galveston bay, on the east, to the pass of Matagorda, on the west, a distance of full sixty miles, without one natural key, or sand-bar, running out from the coast, rendering the use of light-boats necessary to the guidance of vessels entering the harbor. Although this is an open roadstead, the character of the holding-ground will secure any vessel, with sufficient ground-tackle, from harm.

This fact I give on the authority of Admiral Bordean, who commanded the French fleet in the Gulf of Mexico in the years 1838–'39. On his return through the Gulf, after the bombardment and reduction of the castle and city of Vera Cruz, he anchored his squadron off the mouth of the river Brazos, within four miles of the town of Velasco, for the purpose of provisioning and watering his vessels. He remained

ten days at this anchorage, the greater part of which time was passed in the town, at the private residence of General T. J. Green. In frequent conversations the admiral remarked that the outside harbor of the port of Velasco (although an open roadstead) was decidedly the best known to him on the Gulf. We know that he laid off the port of Vera Cruz for many months, and that his high character as a nautical man entitle his opinions to reverential respect.

We will now direct attention to this location, in connexion with the live-oak forest of Texas. The mouth of the Brazos is the acknowledged centre of this extensive forest, densely growing on the banks of said river, on the river San Bernard, and Oyster creek, and extending back from each bank of said streams to the full extent of tide-water navigation, which may be fairly estimated at fifty miles, (calculating their meanderings,) embracing an area of two hundred and fifty thousand acres of live-oak growth. The exclusive right to the live-oak growth on these lands can, at present, be purchased (through all time) at six dollars per acre. If the United States were to make a purchase of the exclusive right in this timber, the government would have an exhaustless supply of the finest ship-building material on the continent, situated on tide-water streams and discharging their waters into the Gulf of Mexico; *or, indeed*, what a vast field is here opened for individual enterprise.

I have been led into this digression by the magnitude of the subject involved.

We will again return to the consideration of Velasco, and its local advantages. The river at the mouth of which this town is located is the only one emptying into the Gulf where a formation of rock is found at the head of tide water. Sandstone is found at Orozimbo immediately at the head of tide. Limestone of very superior quality is found about six miles above this point, on the west side of the river, but not reappearing on the east bank, nor does it extend to the river San Barnard, distance fifteen miles, (west.) This stratum of stone extends westerly about twelve miles, where it is abruptly cut off, presenting a decided case of accidental formation. There is, however, a sufficiency of limestone in the field already explored to construct wharves, docks, or a breakwater, affording over the bar a depth of thirty feet water, (there being in the river more than thirty feet head water.) This improvement would render the inner harbor of Velasco more than equal to all the requisites necessary for a great naval depot.

We will now take an immediate home view of the advan-

tages of Velasco compared in health, luxuriance, and cheapness of living with every other sea-port in the Union. The notoriety that this place has acquired for health throughout the State would seem to render unnecessary a single remark on the subject, though, for the information of strangers, it may be proper to state the reasons for the uninterrupted good health enjoyed. It is the resort for health of all the neighboring country, from a full knowledge of the salubrity of its atmosphere, and the unsurpassed luxury of its sea-bathing. Its position immediately on the Gulf, having no bay behind of alternate salt and fresh water, no fresh water lakes on the west or southwest to generate malaria, we breathe an atmosphere fresh from the bosom of an inland ocean before it meets earth's pollution.

On the subject of living we will present items of cost. Fresh beef, of superior quality, we command at six cents per pound; venison (in abundance) at five; mutton, lamb, kid, poultry, pigs, eggs, and butter as cheap as in any other sea-port market; fish, oysters, and wild fowl we have in wasteful profusion; fuel without cost, that essential article being brought almost to our doors by the annual freshets in the rivers; bacon, flour, coffee, tea, and rice at Orleans prices, with the addition of freight; sugar, syrup, and molasses are the products of our immediate neighborhood; corn meal, seventy-five cents per bushel; sweet potatoes, fifty cents. Other vegetables for table use are raised here in abundance at as little cost as in any other section of the country. The above facts come within my own knowledge. I therefore vouch for their verity.

Texas is now a member of the Federal Union, and we will here take occasion to direct attention to the ulterior prospects of the town of Velasco, connected as she must be with the political and commercial relations of the Union; bearing in mind that Texas is at present a frontier State; not forgetting the probabilities of war, and its certain theatre—the Gulf of Mexico.

The sovereign authorities of this mighty nation stand charged before the world with a morbid thirst for extension of territory. Whether this charge is founded in fact or is a calumny on the sovereign people, I will not hazard an opinion; though in honest sincerity of soul I for one do aver (however much it may be charged with morbidness) that in my humble judgment it is a most laudable thirst, having for its object the extension of the blessings of liberty to that portion of the human family who have capacity to appreciate and intellect to cultivate the inestimable treasure; the first best gift of a

most munificent father to his chosen children, withholding the blessing only from those to whom it has been forbidden by an especial ordinance of Almighty God, handed down to us through his chosen servant, Moses.

The ordinance will be found in the third book of Moses, called Leviticus, chapter the twenty-fifth, verses forty-fourth, forty-fifth, and forty-sixth. And may I here be permitted to ask, whether there can exist a rational soul so hardened in iniquity as not to shrink with horror from the gross sacrilege of questioning either the wisdom or justice of an ordinance emanating from a source so high?

From this digression, for which I contracted in the beginning, I will now return to the text. In the event of a war (which is not improbable) with any one or two of the maritime powers of Europe, the theatre of that war will inevitably be the Gulf of Mexico. Texas, with an unprotected coast of from three to four hundred miles, with all her sea-port towns, would be effectually cut off from all connexion with her sister States. Her towns on Galveston bay, at the mouth of the river Brazos, on Matagorda, Aransas, Corpus Christi, and Brazos Santiago bays, would inevitably become the unresisting prey of our enemies; our luxuriant and improving seaboard settlements plundered and laid waste without, in our present condition, the slightest show of resistance.

Texas, with her wide domain, entered the Federal Union without cost to the government. She was not a conquered or a purchased (peopled) territory. No, her gallant people, who rescued this fairest portion of the globe from the iron grasp of military despotism, most earnestly solicited the happy connexion that now exists. Merging their sovereignty, and by the same act evincing a liberality equalled only by their chivalry, presented to the United States government their navy, dock yards, and customs.

It is not my purpose to make the impression that this conduct on the part of the people of Texas gives them claim to peculiar favor or extra protection. They make no pretension to such claim, though they cannot help positively feeling that they are entitled to a due share of favor and protection from the federal government. The citizens of Texas, since their connexion with the Union, have on all occasions been ready and willing to strip their arms and bare their breasts to the enemies of our country, whether they be civilized or savage foes. Thanks to a kind Father on high, they have the nerve to meet and a resignation to bear, in defence of their country and constitutional liberty, whatever the chances of war may throw in their way.

In speaking of constitutional liberty, we beg to be distinctly understood as having reference to the liberties guarantied by the hallowed Constitution bequeathed by our god-like fathers, (a gift rather of inspiration than of human wisdom,) not alone to their immediate children, but to the whole human family, save those against whom a positive interdict had been pronounced.

In defence of that Constitution in its original purity, I, for one, (and I believe I am expressing the feelings of the people of Texas,) will war to the knife, regardless of odds; and with open arms receive the cold embrace of death with loud cheers of exultation, rather than see one syllable perverted or expunged from that cherished gift of inspiration, the only written instrument known to the world securing to man a full share of practicable and rational liberty.

We will again revert to our text. It has been already stated that the finest harbor on the Gulf of Mexico was within four miles of the town of Velasco. In which harbor the congregated shipping of the world can lay and ride in perfect security. It has also been premised that the inner harbor of said town, when entered, gives as perfect protection to shipping as a dry-dock. And we will now undertake to demonstrate that protection might be secured at a small cost, estimating the importance of the work in a national point of view, without regard to the incalculable advantages immediately accruing to the State of Texas in her present defenceless condition.

The fact cannot be disguised that war with one, two, or perhaps three of the great maritime powers of Europe is by no means improbable; and that in the event of such war the Gulf of Mexico must be its principal theatre. Permit me now, most respectfully, to call the attention of our government to the defenceless condition of Texas through her whole extent of seacoast, Cut off as she will be from her sister States; without a single rallying point for her willing and gallant people; without a solitary place of refuge through her extended coast for crippled vessels of war, *when*, (to our knowledge,) by the expenditure of a few millions of the daily-announced surplus treasure of the nation, protection can be given to our seaports, and a place of refuge (near the centre of our seaboard, measuring from east to west) for our disabled shipping, where they can be refitted for service on the waters where their services are required.

At the mouth of the river Brasos thirty feet depth of water can be taken over the bar at a cost hardly worth estimating, compared with the importance of the work in a national point of view. We have also the materials (live oak and exhaust-

less banks of sand) for the construction of forts as impregnable as the rocks of Gibraltar, when manned by the tried, hardy, and practiced yeomanry of Texas. Superadd to these considerations the necessity we are under, in the event of war, of having a southern naval depot equal to all the requisites of the largest class of war vessels.

I will here beg leave to suggest another means of connexion between the extreme southwestern State of the Union with her sister States in the event of foreign war.

From the river Mississippi to the Rio Grande an inland steamboat communication can be made on tide water levels through our bays, lakes, bayous, and lagoons, at a cost almost too small to be estimated, when we take into calculation the utility of such communication, either in time of peace or war. Our commerce through this whole extent would be freed from all the dangers of the sea, to say nothing of the security to human life in conducting the commercial and friendly intercourse between these two distant points, and all the sea port towns intervening between these great rivers.

By reference to the maps of Louisiana and Texas, it will be seen that nature has very nearly effected this important work. Limited as is the present capital of Texas, this subject has already attracted individual enterprise. In the city of Galveston a company was organized who have recently completed a canal connecting the waters of Galveston bay with the mouth of the river Brazos, giving a choice of depots for the rich products of this immense river without the cost of reshipment. This work, if extended, would give a choice of seaports to the productions of all our rivers entering the Gulf between the Rio Grande and Mississippi, without incurring the dangers of the sea, nor the hazard in passing the bars to reach the sea.

The practicability and economy of the proposed improvement has been demonstrated by the success attending the skill and energy of Captain Bradbury, who had charge of the operative department in executing the work for the Galveston company. With this gentleman I have the pleasure of a personal acquaintance. I have been on board his steamboat excavator, and witnessed with delight its successful operations under his able management.

Should the government deem it expedient to make this inland communication, so important to Texas in the event of a maritine war, I have no doubt that Captain Bradbury (having completed the Galveston and Brazos canal) would undertake, on reasonable terms and in reasonable time, to execute the plan through its whole extent.

It is unnecessary here to animadvert on the disproportioned expenditure of public treasure in improvements on, and protection given to, the northern and southern sections of our Union. It would, indeed, swell this article to an unreasonable length. I will, therefore, refer my readers for information on this subject to the very able pamphlet published by Mr. Garnett, of Virginia, in 1854, where full and certain information will be found.

This digressive article is furnished for publication under a conviction that each digression is entitled to separate discussion, and that by presenting them to public view abler pens will be enlisted in their discussion than I affect to wield.

THE FAILURE OF FREE SOCIETY.*

The failure of free society is an idea that will seem novel and preposterous—something new under the sun—at first blush, to almost every mind.

The reverse of the picture is but too familiar. We have all heard of the abominations of slavery; every gale that sweeps from the north brings to our ears harsh denunciations of the peculiar institution of the south, and our auditory nerves have become so attuned to the sound that we have yielded a reluctant assent to its burthen, and, admitting slavery to be an evil, have sought to justify our holding negroes from the doctrine of expediency. Mr. Fitzhugh, in his defence, assumes the higher and more tenable ground of right and reason, and instituting a comparison between the relations of capital and labor, as they exist in southern slavery and in the free societies of Europe and the northern States of the Union, endeavors to prove the vast superiority of the southern system, in its principles, tendencies, and results, in its care for the comfort, protection, and happiness of the laborer, over the glittering structure erected upon the much vaunted liberty and freedom basis of northern society. European and American abolitionists, who, without having a single, social, or religious theory in common, have yet, with marvellous unanimity, banded to hurl foul scorn upon the south, are told by our author to look at home at their own societies, and to see how the discontent, misery, yea, even the starvation of the working classes, are gnawing at

* *Sociology for the South; or the Failure of Free Society:* By George Fitzhugh. "The thing that has been, it is that which shall be; and that which is done, is that which shall be done; and there is no new thing under the sun."—Eccl. 1: 9.

Naturam expelles furca, tamen usque recurret.—HORACE. Richmond, Virginia, A. Morris, publisher, 1854: 1 vol., 12mo., p. 310.

their vitals—the laceration and suffering but illy concealed by the fantastic garb of liberty. It is, indeed, Hamlet fighting Laertes with Laertes' poisoned rapier. Although it has been a common argument with southern writers to point to the misery of Europe as a reply to the criminations of abolitionists, yet this recrimination has simply meant heretofore, Mind your own business; you have enough to do at home; it were better to evidence your love of humanity by a little practical benevolence in saving from the clammy clutch of famine and despair the suffering Irish or other poor of your land than by indulging in lachrymous lamentations over the fancied ills of well-fed and happy Sambo. Mr. Fitzhugh does this; but he pushes the argument further, and shows that all the crime and suffering of Europe is the legitimate result of the free, *laissez faire* and *pas trop gouverner* system of political philosophy; he shows that the establishment of free labor arose from no higher conceptions than all antiquity cherished of humanity; no nobler estimate of our duties to our fellow creatures than the sentiments of Terence, at which the whole Roman theatre rose: *Homo sum, humani nihil a me alienum puto!* expresses, but from the sordid calculation of capitalists, that if one can have the profits arising from labor, without being saddled with the cost of rearing it up and maintaining it when old age superinduces infirmity and dependence, his means of producing wealth must be considerably increased and rapidly facilitated.

The argument is conducted in a manly, vigorous, attractive style. In this little book he takes issue with political economy, considered as the science of free society, with its dogmas of "free competition" and "supply and demand," *et id omne genus*, for he considers that he finds in its teachings the Pandora's box, whence have issued all the ills that the employees of Europe now endure. Adam Smith's philosophy of free trade is most ably analyzed in the first chapter of this comprehensive book, and an English author is brought forward to testify to its effects in these words: "There is no disguising from the cool eye of philosophy that all living creatures exist in a state of natural warfare; and that man (in hostility with all) is at enmity also with his own species. Man is the natural enemy of man; and society, unable to change his nature, succeeds but in establishing a hollow truce by which fraud is substituted for violence." The term "society" applied to such a community is evidently a mismoner; for where all are "hostile, antagonistic, and competitive," and free, the sovereignty of the individual is triumphant, and every man is his own church, his own govern-

ment, and, says Stephen Pearl Andrews, his own society. Where so large a number of subjects, involving the most philosophical argumentation, and exposing at every step the most popular fallacies, is treated in so small a compass, the work must, of course, be rather suggestive than elaborated; and, in endeavoring to express his meaning with epigrammatic point, Mr. Fitzhugh is sometimes betrayed into seeming paradox. Some of his statements are to be taken *cum grano salis;* such, for instance, as that "all husbands at the north are wife murderers;" and when he says that "it would be difficult, very often, for the most ingenious casuist to distinguish between sin and liberty." In this latter statement the shock our reason receives from its enunciation is occasioned by an abuse of terms; for he, when speaking of *liberty*, means *license*, and we, receiving it in its common acceptation as "freedom from violent restraint," can perceive no connexion between our definition of liberty and sin, while we can readily see how license and sin are related.

It is not our purpose to notice the many interesting topics this little volume offers to our consideration in an incidental rather than a direct manner, such as banks, usury, towns, rivers and roads, education, exclusive agriculture, association of labor, the balance of trade, small nationalities, &c., but but after considering briefly the comments of Mr. Fitzhugh upon "The Declaration of Independence and Virginia Bill of Rights," we will direct the reader's attention to the chief object of the book, the proof of the failure of free society.

Mr. Jefferson's preamble to the Declaration of Independence, asserting that "we hold these truths to be self-evident that all men are created equal; that they are endowed by their Creator with certain inalienable rights, that among them are life, liberty, and the pursuit of happiness," has always to our mind presented a singular contrast with the well-known saying of the sage of Monticello, "that some were born with saddles on their backs, and others booted and spurred to ride them;" and observation would incline us to decide that there was more truth and less romance in the latter declaration than in the first. Our diligent revolutionary cultivator of "peas and philosophy" was indebted for the would-be axioms of the Declaration of Independence—as he was indebted for all his political, social, and religious theories—to D'Alembert and Diderot, French infidels and the editors of the world-renowned *Encyclopédie*. It is true that the idea of equality—equality before the law—is recognised by Herodotus (book 3, sec. 80) in the observation that "the government of the many has the most beautiful name of *Isonomia;*"

but this was a mere euphonious word, the type of no real thing; for, at the very time Hereodotus wrote, in Athens twenty thousand freemen gave law to four hundred thousand slaves. Jean Jacques Rousseau shares with the Encyclopédie the honor of promulgating to modern Europe, with many other eccentric theories—as that men are happier in a state of nature than under the laws of civilization—the assertion that men are born equal in civil and political rights. These formula have frequently been assailed by statesmen and philosophers. England, though as a sentiment she may approve, has never acted practically upon this theory. "Her Bill of Rights did not declare, nor did the genius of Somers or Maynard conceive the political axiom, that all men are born equal. It may find acceptance from individuals in England, but it is disowned by English institutions," says the distinguished Massachusetts Senator, Charles Sumner. Lord Brougham, Carlyle, and Calhoun have all ridiculed the idea of equality as absurd. Major Lee, in his "Observations on Jefferson's Writings," animated perhaps by too much private spleen, and indulging more in verbal than logical criticism, has characterized the declaration as being "exuberantly false, and arborescently fallacious." Mr. Fitzhugh's argument is substantially this: All concede that men are not born physically, morally, or intellectually equal; some are strong, others weak; some amiable and brave, others cowardly and prone to all kinds of wickedness. These natural inequalities beget inequalities of rights. The weak in mind or body require guidance, support, and protection; they must obey and work for those who protect and guide them; they have a natural right to guardians, teachers, or masters. Nature has made them slaves; all that law and government can do is to regulate and mitigate their slavery. In the absence of legally constituted slavery their condition would be worse under that natural slavery of the weak to the strong, the foolish to the wise and cunning. The wise and virtuous, the brave, the strong in mind and body, are by nature born to command and protect; and law but follows nature in making them rulers, legislators, judges, captains, husbands, guardians, and masters. Circumstances, education, and association increase and aggravate these natural inequalities among men from generation to generation. No institutions can prevent the few from acquiring rule and ascendency over the many. Liberty and free competition invite and encourage the attempt of the strong to master the weak, and ensure their success. "Life and liberty" are not inalienable; they have been sold in all countries and in all ages, and must be sold so long as human

nature last. Every sailor and soldier alienates his life and liberty and the pursuits of happiness; every wife, ward, and apprentice has aliened liberty, and to some extent the pursuit of happiness. The great object of government is to restrict, control, and punish man "in the pursuits of happiness." All crimes are committed in its pursuit. Under the free or competitive system most men's happiness consists in destroying the happiness of other people. This then is no inalienable right.

This argument is, to our mind, conclusive, and is—

"What oft was thought, but ne'er so well expressed."

Mr. Fitzhugh sums up as follows, and, as it will be more convenient, we will consider his arguments in the order he here states them:

"Our chief object has been to prove the failure of free society. We knew if we succeeded in that, the various theories propounded in this work on other subjects would be found, when closely examined, necessary results, or legitimate sequences.

"In order to enable the reader fully to comprehend our argument, and to furnish a fair field for its refutation if false, we will now sum up the chief points which we have made, and on which we rely:

"*First.* Free society is theoretically impracticable, because its friends admit that 'in all old countries the supply of labor exceeds the demand.' Hence a part of the laboring class must be out of employment and starving, and in their struggle to get employment reducing those next above them to the minimum that will support human existence.

"*Secondly.* The late invention and use of the word 'sociology' in free society, and of the science of which it treats, and the absence of such a word and science in slave society, shows that the former is afflicted with disease, the latter healthy.

"*Thirdly.* We prove the failure from history and statistics.

"*Fourthly.* We prove it from the exodus now going on from western Europe with all the reckless panic and trepidation of a '*sauve qui peut!*'

"And, lastly, we prove it from the universal admission of all writers who have of late years treated of the subject of society in free Europe."

The true object of societary organizations is, and should be, the happiness of the greatest number. The happiness of the greatest number of the laborers under free society depends upon their wages. When the supply of labor exceeds the demand, as it confessedly does in all old countries, the law

of free competition grinds down wages to a pittance that will not support existence. The poor war with one another by underbidding, and the capitalist, good easy man that he is, employs the laborer who will work for the least wages. Laborers are more abundant than employers, and the consequences are a half million die of hunger in one year in Ireland, and jails and poor-houses are the receptacles of those whom the law makes equals and enemies.

The law of nature is competition. The strong animal exterminates the weak, and man, unrestrained by government, preys upon his fellow. The end of government is to protect the feeble in mind and body from the rapacity of the vigorous; but the liberty and equality school of philosophers would do away with these govermental restrictions and reinaugurate the law of nature, or free competition. "Might makes right," and "all men are free"—free to stand on their axioms. Every candid mind must confess the cogency of this reasoning, and admit that the social theories of Pericles and Antony, of Cicero and Socrates, of Fabricus and Justinian, which afforded protection from violence, maintenance in sickness and old age, and secured employment for their offspring, to the large majority of every community, the working classes, was far superior in its results to the experiment of free competition and equality tried in a little corner of Europe for the last three hundred years. Happy would the poor Irish have been if they could have preserved life at the price of liberty, as Sismondi relates the greater part of the free citizens of Rome did, when the barbarian overran the empire; after a short time they submitted themselves as slaves to some powerful lord, having found themselves incompetent of self-preservation. Famine and the pestilence that walketh at noon-day are more formidable and ferocious foes than were the Goths and Vandals, and the Irish and European freeman attacked by them found, like the Romans, that "no one would protect them, no one would relieve them, no one would maintain them without having some lasting interest in their labor, and this interest could only be obtained by their becoming his property."

Mr. Fitzhugh's second proposition is, that the invention of the name and science of sociology in free societies, and its absence in slave societies, proves the disease of the former and the health of the latter. Sociology is a hybrid term, meaning the science of society, the first half from the Latin, the latter from the Greek. The Greeks had no idea of society existing under any other form than *Polis,* a city. The city was the heart of the State; and politics, political philosophy, and

political economy referred simply to the metropolitan life. The country was inhabited by serfs under overseers; the city by freemen and masters. Hence there was an intimate connexion between government and society under the Greek policy, embraced by the general term economy. In small States, where the city constituted the vitalizing power of the community, the action of society and government upon each other was reciprocal and equal. A consideration of these political theories constituted the chief employment of the philosophic minds of Socrates, Plato, and Aristotle. The vast dependencies of the Roman republic caused a much larger meaning to be attached to the word "politics" than it had hitherto enjoyed, and at the same time introduced a new word—*socieles*—expressing the mutual rights and duties of the 1,200,000 men the city of Rome then contained.

Compte, the French metaphysician, was the first person to utter this term, sociology; whether the coinage is his is dubious; and although he himself is no advocate of socialism or communism, yet its speedy adoption by the socialists, and its great currency throughout Europe, proves that such a science exists there, and has its professors; which is just as conclusive a proof of social disease as the practice of medicine is a proof of the existence in man's body of all the ills that flesh is heir to. In the south we have no anti-renters, perfectionists, and few atheists; while in the north every man has some favorite social theory to promulgate; and in religion they seem equally divided into infidels and millenarians. "Christianity melting into infidelity," is the characteristic term used by an able writer, in reference to one-half of the north; and the author of the "Democracy of Christianity," speaking for the other half, longs for the descent of Christ upon earth, when the lion and the lamb shall live in harmony together, and every man shall enjoy his own vine and fig tree, which he interprets to mean a certain allotment of land. These facts, proving the decrease of free society, and the total absence of such theorists and ideas from the south, proving the healthy tone of its system, we may fairly conclude the second proposition established.

The next argument is testimony from history and statistics to the failure of free society. The fact, admitted by all, that crime and pauperism have increased, *pari passu*, with liberty, equality, and free competition, would seem to render unnecesary much argument on this point; and when we add that, with slavery, the Greeks, the Romans, the Egyptians, and the Persians, and all Europe, for a thousand years, knew nothing of pauperism and beggary, but that they are the imme-

diate results of the free society experiment, the reasoning, if we admit crime and pauperism to be fatal evidence against the efficacy of any system, is impregnable.

The fourth proposition of Mr. Fitzhugh is that the exodus from western Europe is a proof of the failure of free society. This emigration, which threatened at one time to leave Ireland without inhabitants, was undoubtedly occasioned by the imminent danger of starvation at home, and the hope of passing from the Egypt of bondage and want to a Canaan of gold, milk, and honey. Although our Know-nothing movement has caused the number of emigrants to decrease from 34,906 in March and April, 1854, to 5,358 in the same months of this year, and the withdrawal of so many laborers from the field has diminished the competition at home, and temporarily relieved the working classes, yet the fact that such an exodus, to prevent extermination, should be necessary, proves the inherent defects of the competitive system.

The last statement of Mr. Fitzhugh is, "the admission of all writers who have of late years treated of the subject of society in Europe." This is a question of fact, and we will summon one of Mr. F.'s witnesses to prove the universality of the admission. Blackwood, November No., 1850, says:

"No man with a human heart in his bosom, unless that heart is utterly indurated and depraved by the influence of mammon, can be indifferent to the fate of the working classes. Even if he were not urged to consider the awful social questions which daily demand our attention in this perplexing and bewildered age by the impulses of humanity, or by the call of christian duty, the lower motive of interest alone should incline him to serious reflection on a subject which involves the well-being, both temporal and eternal, of thousands of his fellow-beings, and possibly the permanence of order and tranquillity in this realm of Great Britain. Our civil history, during the last thirty years of peace, resembles nothing which the world has yet seen or which can be found in the records of civilization. The whole face of society has been altered; old employments have become obsolete, old customs have been altered or remodelled, and old institutions have undergone innovation. All this we call improvement, taking no heed the while whether such improvement has fulfilled the primary condition of contributing to and increasing the welfare and prosperity of the people. Statistical books are written to prove how enormously we have increased in wealth, and yet, side by side with their bulky tomes, you will find pamphlets containing ample and distinct evidence that hundreds of thousands of our industrious fellow-countrymen

are at this moment famishing for want of bread and lack of employment, or compelled to sell their labor for such wretched compensation that the pauper's dole is by many regarded with absolute envy. Dives and Lazarus elbow one another in the street, *and our political economists select Dives as the sole type of the nation.* To work is not only a duty but a privilege; but to work against hope, to toil under the absolute pressure of despair, is the most miserable lot that the imagination can conceive. It is, in fact, a virtual abrogation of that freedom which every Britton is taught to consider his birthright, but which now, however well it may sound as an abstract term, is practically, in the case of thousands, placed utterly beyond their reach. * * * Here is a question presenting itself to the consideration of all thinking men—a question which concerns the welfare of hundreds of thousands—a question which has been evaded by statesmen so long as they dared to do so with impunity, but which now can be no longer evaded; that question being, whether any possible means can be found for ameliorating and improving the condition of the working classes of Great Britain, by rescuing them *from the cruel effects of that competition which makes each man the enemy of his fellow; which is annually driving from our shores crowds of our best and most industrious artisans; which consigns women, from absolute indigence, to infamy; dries up the most sacred springs of affection in the heart; crams the jail and the poor-house; and is eating like a fatal canker into the very heart-blood of society.*"

Here we conclude our critique, inadequate to the merits of our author, as we know it to be, remarking to the general reader that though we have sought to give these remarks a direct bearing upon but one object of Mr. Fitzhugh's book, yet the work itself is most varied in its topics and their treatments, and would afford an hour's most delightful reading to the dullest man in christendom.

NOTE.—A Philadelphia writer, in the Charleston Mercury, speaks as follows of Mr. Fitzhugh's work:

"The aim of the writer is to prove that Fourierism, socialism, communism, or free society, (for the name is Protean,) is a most egregious failure. The scope of his argument and illustrations has necessarily drawn in the general question of slavery—slavery in its most enlarged interpretation—whether white or black—and, I think, he convincingly establishes the truth that the wisest, happiest, and most cheerful form of socialism is slavery itself; that is, a community governed by one head, and where both master or director, and those whom he governs, act and react on each other by the consciousness of mutual dependence, affection, and mutual interests. He shows that in the fearful struggle that is perpetually and so anxiously agitating both capital and labor in these northern States—the struggle between rich and poor—that the first minds, both in Europe and in this country, are gravitating towards the same opinion, namely: that slavery is the best security for the lattter—that it is the true relief for pauperism, which is the growth of free society, so-called.

"Much research, strong common sense, great condensation of thought—and these clothed in language clear, nervous, and almost aphoristic—make it an instructive and agreeable book either to the learned or unlearned. Being written in brief divisions or chapters, our children can easily be taught to comprehend it, and will find in this armory weapons to defend what has been so much vilified and misrepresented. We will learn how to protect a great principle on its own merits, and not to be restricted to reason on the mere question of social necessity or expediency, as has been done hitherto—many persons admitting slavery to be an evil, thus making a gratuitous surrender of the whole cause, and then begging quarter upon pity.

"The splendor, animation, and crowded population of the northern cities, excite, bewilder, and delight southern men and their families. Compared with the calm—the easy indolence of their own communities—a painful sense of inferiority depresscs them when they go back to their own homes. The difference is as between a magnificent panoramic view and a dark still landscape, life in action and life in stagnation.

"Let them be content. This writer will do much to reconcile them to what they have, and what they really are, when he reveals to them the interior view—the miseries of pauperism—with its grim and hideous attendants, its homicides and its wife murders, its dire degradation—as shown in penitentiaries and houses of refuge, even for children—its opium eatings, its taxations, and police-spies parading the streets in regiments. These last recalling what Carlyle deridingly has written of our institutions, that "they are anarchy, plus a street constable." I cannot but hope that, on some persuasion from you, our booksellers will bring the work into their collections, thus placing it within the reach of every one."

THE SOUTH AND THE UNION.

THE UNION, PAST AND PRESENT—HOW IT WORKS, AND HOW TO SAVE IT.

Agrarian societies are numerous at the north; they hold *national conventions*, and have organs, avowed and secret, in the newspaper press. Long leases are distrusted at the north, for there is danger that the tenants will refuse to surrender at their close. Whole counties have united in refusing to pay rents which were justly due, and the officers of the law, while in the execution of its mandates, have been deliberately murdered. And these violators of the rights of property and life, of the laws of God and man, had strength enough to elect a governor whom they could force to pardon the convicted murderers! So strong is the agrarian spirit, that so eminent a man as Mr. Webster is forced to conciliate it by proposing in solemn Senate to confiscate the public lands, by giving a quarter section to every free white male, native and foreign, who may choose to enter upon them. To meet all these dangers the free States have no security out of the Union; once left to themselves, their perils would increase ten-fold, for it is essential to the public welfare, to the laborers and the poor themselves, that government should be able to protect all the rights of property. No matter what the sufferings of the laboring class, they would be doubled and tripled by the insecurity of private rights. In England this ability in gov-

ernment has been preserved by a highly aristocratic constitution, both social and political; but in France the tide has swept away government after government like the waves of the sea; one dictatorship has followed another, now an emperor, now a king, now the *bourgeois* capitalists, and now mere numbers, all equally unstable. And all this despite the fact that France has been, under all dynasties since the first revolution, eminently democratic in her civil laws. The reason is not hard to discover. At the bottom of all French politics—and the same applies with equal truth to the free States of the north—lies the idea that *might makes right;* in other words, that a majority of mere members has a natural, indefeasible, and absolute right to govern the minority. No matter about the injustice and oppression of the rule, the minority has no remedy short of civil war. This theory acknowledges what it calls the right of revolution in extreme cases; but that right can only be established and legitimated by the success which proves the minority to be the strongest party, and thus converts them into a majority, which brings us back to the starting place, that *might makes right.* All the free States, like France, are organized upon this principle of a majority's unlimited right to rule; their idea of a perfect State is a highly centralized, consolidated government, where the will of the greater number may be expressed and executed with the greatest rapidity and certainty. Such a government does not confine itself to the external relations of the State, and the protection of life and property at home, but it invades the interior of the family; it destroys the unity of married life by creating separate interests in the parties; it robs parents of the education of their children, so as to destroy individuality of character, and train and prune them to the same moral and mental stature. The majority of numbers is more powerful than the Czar, because it is *physical right;* it is more grinding in its tyranny, because it has less feeling of personal responsibility, and its Argus eyes can search every corner of the country; its infallibility is less open to attack than the Pope's, because it is, itself, public opinion. Like other despots, it never hears the truth; its ears are trained to feed upon a fulsome flattery, and throngs of fawning courtiers are ready to call its unbridled passions, greatness, and its lavish expenditure of the taxes, wrung from the minority, goodness. The love of true liberty and manly independence of thought cannot flourish in such a community; the greediness of office and the love of power take their place; there is an eager courting of popular favor, a feverish fear of differing in opinion from the majority, a making haste to leave the few and

join the many. Hence the politicians of the free States have always been wanting in the comprehensive views necessary to found governments or parties, and in the moral courage, the energy, and administrative talent requisite to conduct them with success. This is acknowledged by Theodore Parker, one of the best writers of New England, in his discourse on the death of John Quincy Adams, and he attributed the superiority of southern statesmen in this respect to their slave institutions. These accustom them early to deal with men, and they learn to act "as those having authority." The management of the little commonwealth of the plantation is an excellent training for the administration of a larger State. Hence it is that the north has always had to look to the south for generals and Presidents. No one will deny that this, like all general rules, has had brilliant exceptions, especially in military life, where the nature of the calling and the tenure of the office begets more independence of character. But the north has never produced a statesman who has durably stamped the impress of his mind upon the legislation of the country, and made his thought the thought of his own generation and of posterity. There is no great measure of public policy which was originated by a northern lawgiver. Not even such men as Adams or of Webster have been able to associate their names with the authorship or development of any far-reaching, abiding acts of legislation. The union of wisdom, in the highest scripture sense, with moral and physical boldness, with firmness and prudence, which made Washington the leader of our revolutionary armies, and the appropriate guardian of our infant federation, was eminently characteristic of the southerner and the slaveholder; it was the *degree* only, not the *kind*, that was miraculous. Such was the chief leaders of the convention, the men to whose suggestion the Constitution owes its essential features—Madison and Mason, Randolph and Pinkney, all of the south. The founders of the two great parties were neither from the north; Hamilton was a West Indian, and Jefferson, who breathed his soul into the republican party, and Madison, who gave it a shape, were both Virginians. In the war of 1812, two Virginians, Scott and Harrison, drove back our foes in the north, while a Carolinian led the southern rifles to victory at New Orleans. All the great measures which have agitated the present generation—the bank, and the independent treasury, the internal improvement system, the American system, and free trade—have been brought forth and shaped by the minds of a Calhoun or a Clay, or carried into practice by the iron will of a Jackson. The only north-

ern Presidents we have ever tried have been failures. The elder Adams, who came into power on the popularity of Washington, in two years broke down, and every vestige of his administration was swept away by the popular voice. His son fared no better, and Van Buren, who mistook cunning for wisdom, was a politician instead of a statesman. The prestige of Jackson's favor could elect him, but nothing could save him after a single trial.

Whatever of greatness our country has attained has been chiefly due to the administrative talent of southern men, and, above all, to the southern vote, which, while it was yet strong enough to be heard, restrained the disposition of the north to convert this Federal Union into a grand consolidated State, on the French model, where the numerical majority might have absolute sway. If the free States were to form a separate confederacy it would soon assume this character. The measures which, as a section, they have advocated in the present Union all have that tendency. The forms of their State governments—their political theories—all conspire to make such a result certain. The small States would be deprived of their equal vote in the Senate, and speedily absorbed by their more powerful neighbors. All the proper work of the several State legislatures, as well as of private enterprise, would be thrown on the central government; the States would become mere provinces, and Congress a national assembly. In such a State there would be no safety for property. The number of those who want property is always greater than that of those who have it, the poor more numerous than the rich; and they will certainly use their acknowledged sovereign right, as a majority, to gratify that want, and take what they please. The northern plan of meeting this danger has always been to create a strong moneyed interest by class legislation, by large government expenditures, and by patronage. Northern statesmen know that the aristocracy of birth is impossible; they hope to substitute the aristocracy of money by means of the funding and paper system, and by the yet more potent umpire of the manufacturing system. In other words, the plan is to govern the masses by the power of money and corruption. The evil day may be thus delayed, but the remedy increases the inequality of fortunes and the difficulties of the laboring poor. Their sufferings are aggravated and their character degraded; and when the outbreak come—as come it ultimately must with the accumulated force of pent up waters—it is the outbreak not of men, but of demons. France is the living and unhappy proof of all our reasonings. The reaction against the tyranny of the numeri-

cal majority, as public opinion, produces the multitude of "false doctrines, heresies, and schisms," the growing infidelity, the Grahamites and Fourierites, the Mormonism and Millerism, and all those wild vagaries of fanaticism to which the people of the free States are so prone, but which cannot live beneath the southern sun. The reaction against the tyranny of the numerical majority, as government, begets the proclivity to mobs and tumults, the instability of all constitutions and laws, which we see manifesting itself in the free States. The only rebellion ever known in the United States against the exercise of undisputed constitutional authority was in Pennsylvania. In Rhode Island the Dorrites would have waged civil war if their leader's courage had not failed him at the crisis, not for any great principle, but merely to determine by a trial of actual physical force—a most rational and logical test—which party was the sovereign numerical majority. Federal authority had to be invoked. When has a southern State ever had to call in foreign aid to settle her domestic difficulties? The legislature at Harrisburg had to be brought to order by a military force; and the Senate of Ohio, after one or two hundred ballotings, lately elected a speaker, who has since been forced to resign for bargain and corruption. The State was near being thrown into a state of anarchy last year by the inability of the legislature to determine who were its members! In the chief cities mobs dispute the right of private citizens to consult their own taste in a play actor; they set fire to convents of helpless females, and they tear down the house of God because it shelters the helpless emigrant from their brutal fury. And yet, when a citizen soldier has the nerve to fire upon them, and vindicate the majesty of the law—an example of moral courage, alas! too seldom found at the north—instead of receiving the thanks of the whole community, his house is the mark of the midnight incendiary, and all the avenues of public honors are forever closed to his approach.

From all these dangers the conservative influence of the south has hitherto preserved the free States. Her tributes of slave-grown wealth have kept up the wages of their labor and the profits of their capital—has delayed the war between rich and poor, and soothed the deep-seated sore—the *immedicable vulnus*—in their social organization, which nothing can heal. So long as the free States suffer the Union to endure, so long will the south continue her good offices; so long will she be ready to extend her aid, through the federal authority, to restrain her Dorrites and her socialists, her anti-renters, and her mobs. For the conservative character of the Union

rests upon the slaveholding States. With them a very different idea of government prevails. They believe that the sovereignty rests with the people, not collectively, but individually. As the Union is a federation of sovereign States, with her several reserved rights, so in their eyes is each State a federation of sovereign individuals (or families, if you will) with their reserved rights. In their belief there are institutions and rights, derived through the laws of nature, from God alone, which are independent of, and prior to, all government. Such are the relations of parent and child, of husband and wife, of master and slave, and the right to property, which all go to make up the great corner-stone of the social edifice—the family. To preserve these institutions in all their incidents, and all their derivative rights, is the chief duty of government, which it cannot fulfil without such an organization as will give a full and fair voice to every interest and every class, and confer upon each a veto upon the assaults of the others, so that legislation shall not be the voice of mere numbers, but a compromise between the majority and the minority—not merely the will of the greater number, but the resultant of the wills of all. Such a government rests its authority, not upon force, but upon the universal consent; there is no despotic public opinion to stifle freedom of thought, no king numbers to flatter, no rapacious majority can use the forms of law to gratify its raveings for plunder, but every class has to consult the interests of others, without whom it cannot act, as well as its own; and the people are trained up to the statesmanlike practice of goverment in the spirit of union and harmony. The body politic becomes instinct with life and healthy vigor. Public opinion works in its true calling, as the moderator, not the silencer of individual differences. For such an organization the southern States have peculiar and well nigh indispensable advantages in their slave institutions, which forever obliterate the division between labor and capital. The devotion of so large a portion of their surface to cotton, sugar, and tobacco, places, at an almost infinite distance, the day when population will press upon the supply of food; for while the increase of its numbers is in proportion only to the relatively small area that produces grain, the other lands furnish an inexhaustible resource to fall back upon in case of an insufficiency of that production.

When we regard the powerful position in the world which the command of the great staple of cotton confers upon the slave States, their numerous natural advantages in climate and productions, their situation midway in the new hemis-

phere, holding the outlets of northern commerce, and the approaches to South America and the Pacific, through the Gulf, we cannot forbear thinking that they are destined to play a first part in the history of the world, and discerning the finger of God in their stability, while thrones and democracies are tottering around them. Divine Providence, for its own high and inscrutable purposes, has rescued more than three millions of human beings from the hardships of a savage state, and placed them in a condition of greater comfort than any other laboring class in the world; it has delivered them from the barbarous idolatries of Africa, and brought them within the blessings covenanted to believers in Christ. At the same time it has provided the whites of the Anglo-Norman race in the southern States with the necessary means of unexampled prosperity, with that slave labor, without which, as a general rule, no colonization in a new country ever has or ever will thrive and grow rapidly; it has given them a distinct and inferior race to fill a position equal to their highest capacity, which, in less fortunate countries, is occupied by the whites themselves. A large class—often the largest class—living from day to day by the daily labor of their hands, exists, and must exist, in every country; and it is impossible, as a general thing, for the persons of that class to have time, or even inclination, for much mental improvement. The force of peculiar genius may raise one in ten thousand to a higher place in society, but such cases become more and more infrequent as wages diminish with the progress of population, and the care of providing food grows more engrossing. The whole question, therefore, resolves itself into this: Shall the laboring class be of an inferior race, so controlled and directed by the superior minds of the whites, as continually to progress in material and moral well being, far beyond any point it has ever shown a power of attaining in freedom?—or shall that laboring class be of whites and equals, capable of becoming "gods, as one of us," and yet condemned to a slow, but sure, increase of want and poverty—the slaves of society instead of individuals—isolated from their employers by the invisible, but impassable, barriers of custom, aliens from their hearts, and utterly separated in manners, information, opinions, and tastes? Between the southern master and his slave there is a fellow-feeling in sorrows and in joys, a mutual dependence and affection, which calls into play all the finer feelings of man's nature. What of all this is there between the northern capitalist and his day laborer? They have not known each other from infancy, nor been partners through good and through ill fortune.

Perhaps the tide of emigration brought them together yesterday, and will hurry them apart to-morrow. The laborer does not look to his employer as his natural protector against the injustice of the powerful, or as his refuge in sickness or in old age. He must find that in the almshouse. If the laborer is a factory operative—perhaps a girl, or even a child, for in manufacturing societies the children of the poor never know the plays or freedom of childhood—he is regarded as but a part of the loom he attends to. Factory labor becomes more and more divided, the employments more and more monotonous, with each improvement in machinery. There is none of that variety of occupation and those frequent calls upon the discretion and intelligence of the laborer, which make the work on a plantation in the south at once the most improving, the healthiest, and the most delightful species of manual labor. The factory operative, on the contrary, is chained to some single minute employment, which must be repeated thousands of times without the least variation. Nothing worse for intellect can be imagined.

Idiocy and insanity multiply under their influences. In 1840, while the proportion of idiots and insane, to the whole population, was only 1 in 1,100 in the slave States, it was 1 in 900 in all the free States, and as much as 1 in 630 in New England alone. The effects of factory life on health are quite as bad. The cotton factories, the dyeing and bleaching factories, are hotbeds of consumption and disease of the lungs. At Sheffield, a *dry-grinder,* no matter how vigorous his constitution, is never known to live beyond the fated age of thirty-five. In Massachusetts, according to her own statistics, factories shorten the life of the operative one-third! According to the evidence before the committee of the house of commons, it has taken but thirty-two years to change the operatives of Manchester from a race more vigorous than those of New England now are—a well fed, well clothed, moral population—into demoralized, enervated, feeble beings. As one of the witnesses says, "their life has been passed in turning the mule-jenny; their minds have weakened and withered like a tree." How many years will it require to produce these effects in the north, when the span of man's life is already so much shortened? The very severity of the labor undermines the constitution. What wears out the human body is not the greatness of any exertion, but its duration. But the spinner has to move silently from one machine to another for twelve or fourteen hours a day, the attention never to flag, the mules never to rest. It has been calculated that the factory girl walks in this way twenty

miles a day! The system is equally pernicious for the morals. We always find, first, illegitimate births, and then prostitution, as well as drunkenness and crime, increase in great manufacturing districts. How should it be otherwise, when the family is broken up and the factory boarding-house substituted in its place; when children and girls are separated from their parents at the most critical period of life, crowded in heated work-rooms with a promiscuous herd of strangers, lost to all the conservative influences of home? In what regard is such a condition of labor superior to southern slavery? Let the free States begin within their own borders; let them place their white slaves in as good a condition, moral and physical, as the negroes, and then they may talk to us. The increasing hosts who live by toil in factories, the paupers who belong to the State, and the still greater number who drag out a wretched existence in the crowded haunts of want and vice in their great cities, form more than an offset to anything that can be said of negro slavery. We have no patience with this meddling philanthropy, which does not take the beam out of its own eye before it pulls the mote out of its brother's, at the imminent risk of his eyesight; whose charity is all for show, and never grows warm except for objects at a distance; which overlooks want and misery at its own gate, in its eagerness to reform countries it has never seen, and institutions it cannot understand. It is the crying vice of our age; this desire to attend to everybody's business but our own, to perform any duties but those that lie immediately before us. Instead of making the most of our opportunities, we waste our time in vain wishes that the opportunities were greater. The great duty is to improve, to the utmost of our abilities, the condition in which it has pleased God to place us, and therewith to be content.

But this does not suit the ideas of our northern brethren. They must make anew all the work of creation. Divine Providence instituted the relation of master and slave; but it is offensive to their finer notions of justice, and inconsistent with that cardinal principle, "that all men are created equal." Therefore they pronounce it "infamous," and "a crime against humanity;" and it must be abolished, either directly or indirectly, "by preventing its extension, localizing, and discouraging it." The high civilization that accompanies it, all its advantages to both parties must be sacrified, and both thrown upon the evils of a future that is present in St. Domingo and Jamaica. God instituted marriage; he decreed "that man and woman should be one flesh, and that the man should be lord over the woman." But our northern philan-

thropists have discovered that this is all wrong; "all men were created equal," therefore the woman shall vote, as in New Jersey; she shall no longer be one with the man, nor shall he be her lord. The wise old common law carried out into practice the Divine institution, and produced the finest race of matrons and maidens the world has ever seen; but the northern lawgivers prefer the law which was the offspring of the corruptions of heathen and imperial Rome; they divide the household into separate interests; the domestic hearth is no longer a common property to the family. The consequences are what they were in Rome—what they are in Italy and Germany and in France, where the illegitimate births are 1 in 15. The sanctity of marriage is gone; it becomes in practice as in theory of law, a mere civil tie.

WISCONSIN.

At the opening of the 19th century, the "territory northwest of the Ohio" was an unbroken wilderness, shared in doubtful suppremacy by the aboriginal man, and the other denizens of the forest and prairie.

It were needless to except from the universality of this description the occasional advent of the Indian trader, the nascent settlements on the Ohio, which were attempting a precarious existence, or the military posts which were pushed into this outer domain of our republic, in token of our political dominion, and as heralds of an advancing civilization.

In 1802 the State of Ohio was carved out of the body of the northwest, and admitted into the Federal Union. Steadily advancing in population, wealth, and respectability to its present enviable position in our political system, her brief but impressive history commands the admiration of older communities, and awakens the generous emulation of the new. Her population, in 1850, had reached nearly 2,000,000 souls, and she ranks the third in the sisterhood of States.

The history of Ohio has been the history, in succession, of Indiana, Illinois, and Michigan. Their advance has been, in like manner, rapid in population and in other elements of political greatness. The four States above enumerated contained, in 1850, 4,000,000 of freemen.

Surprising as these results are, transcending all that the world had previously known of the creation of new political communities by the peaceful migration of men and of the arts, distancing even all previous experience in the settlement of the new world, it might seem enough for Wisconsin, the youngest of the creations of the ordinance of '76, to say

that she is of the northwest, and shares with her kindred States in the experience of a like early development.

But to say this is not enough. The settlement of Wisconsin has thus far been on a scale unapproached even by that of the four States above enumerated, and constituting with her the area long familiarly known as the "territory northwest of the Ohio."

That this is not a vain boast is a fact too broadly and familiarly known to need the formality of demonstration. For the satisfaction of the curious, however, there is appended hereto a tabular view of the population of the five States of the northwest, for decades of years, constructed by collating the census returns from 1800 down to 1850.

From this table it appears that during the decade 1840-'50 the population of Wisconsin advanced from 30,000 to 305,000, while at corresponding decades of their growth, Ohio presents the figures from 45,000 to 230,000, Michigan from 31,000 to 212,000, while the corresponding increase of Indiana and Illinois was in a much smaller ratio.

It will be observed that the increase of Wisconsin for the ten years ending in 1850 was 900 per cent. By examination of the census returns of that year, it will be found that the increase of Iowa was 345 per cent; that of Arkansas, 114 per cent.; and of no other State over 100 per cent during the same period.

This migration to Wisconsin, unparalled as it is in the experience of States, has not been the fitful result of the gambling mania which is luring its hordes of victims to the land of gold. It has been the steady and persistent flow of men and capital seeking a permanent home and a profitable investment. After filling up the southern tier of counties, the unbroken tide is setting strongly to the fertile valleys of the Fox and Wisconsin rivers, with their tributaries, and to the Mississippi border.

Wisconsin is no less distinguished in the *character* of its early settlers than in their number. Recklessness and wild adventure has found little place in the history of this migration.

Michigan was fairly open to survey and settlement as early as 1830, and in the course of the succeeding ten years its capabilities were explored and appreciated; during which period its population rose, by a massive immigration, from 31,000 to 212,000.

In 1840 the relations of Wisconsin to the intelligent enterprise of the eastern States were what those of Michigan were ten years earlier. The straits had been passed by sails and

by steam, and the Territory of Wisconsin was open to settlement.

The conviction, however. had fastened itself on the mind of New England and New York that the physical elements of prosperity were more decided and more readily available in Wisconsin, and would work out an earlier maturity, economical and social, than had been realized in the history of other States.

In accordance with these impressions, it is confessedly true that the basis of the social character of Wisconsin has been laid in a migration as distinguished in character as it has been surpassing in numbers. The intellect, the education, and the integrity—the head and the heart—as well as the enterprise, the wealth, the industry, and the skill of New York and New England have been laid broadly and deeply under requisition to furnish out the staple of the population which is to leave its impress on the State for generations to come.

Wisconsin has been equally fortunate in the numbers and the material of her foreign immigration.

The great European movement, which is likely to characterise the latter half of the 19th century, will consist, not so much in the improvement of the forms of social organization at home as in the reproduction of her civilization under greatly improved conditions, by a massive emigration to the new world, whose broad surface of land, still unoccupied, is demanding settlement and cultivation with a voice now familiar to the ear, and attuned to the heart of Europe.

There is a Germany in America which is destined to be greater than the German's fatherland. Ireland is already Cis-Atlantic, and regenerate. The Scandinavian, with a remarkable power of assimilation, touches our shores, and is American in thought, feeling, and language.

From all these sources Wisconsin is deriving large and steady accessions of numbers and of wealth, of enterprise and of cultivated intellect; not of those who drop down by accident within our borders, but of those who leave their native shores with no other intention than to find a home in Wisconsin.

Through those several channels of increase and progress, Wisconsin presented in the year 1850—the *third* of her existence as a sovereign State and a member of our national Union—a population of 305,000 souls, a result absolutely without parallel in the settlement of States.

And it is equally true that the opening of her career as a sovereign State has been from a point of nearer approxima-

tion to the standard of social maturity which prevals on the Atlantic border, and with far less sacrifice of the advantages and refinements of modern civilization than has been true of other new States, whether of the northwest or of other portions of the great valley.

It is, therefore, an interesting question, and one which has attracted attention, public and private, what are the natural capabilities of Wisconsin, which have made so broad and permanent an impression upon the mass of mind at home and abroad, as to bring to her shores so large a portion of the men and the capital that are annually seeking a home and investment in the west? The answer to this inquiry naturally arranges itself under a variety of heads, which will be very briefly considered.

Geographical Position.—The State of Wisconsin comprises most of that portion of the original northwestern territory which lies north of the parallel of latitude 42° 30′, and between Lake Michigan and the Mississippi river, and extending to Lake Superior on the north. A portion of this expanse of territory, lying between Green Bay and Lake Superior and to the north and east of Menomonee and Montreal rivers, is attached to Michigan; and another portion, west and north of the St. Croix and St. Louis rivers, to Minnesota.

The area of Wisconsin, exclusive of the waters of Lake Michigan and Superior, comprises fifty-four thousand square miles, or thirty-five millions of acres.

Climate.—Included between parallels 42° 30′ and 48° north, the climate of Wisconsin is of the same general character with that of New York and New England. The average annual temperature, however, of Wisconsin is not of so low a figure as that of the same parallels on the Atlantic border. The atmosphere is drier, more transparent and salubrious, and the whole area of the State is remarkably free from those causes of endemic disease which were by no means unknown in the settlement of western New York, which have been the misfortune of large portions of Michigan, and the scourge of Indiana, Illinois, Missouri, and, in part, of Iowa. Wisconsin is conceded to be the healthiest of the western States. Its summers are adapted, in temperature and duration, to perfect all the products natural to the latitude, but are not oppressive. Its autumns are proverbially delightful. Its winters are close and uniform, but not harsh or generally severe.

Geological Features, Soil, &c.—The limestone underlying the coal fields of Illinois forms the immediate basis of the alluvion of southern Wisconsin. This geological district,

in addition to that portion of the State which lies southerly of the valley of the Wisconsin river, comprises the whole of the slope towards Lake Michigan.

In many portions of this district the lime rock disappears, and the out-cropping sandstone furnishes a fine material for building.

The lead-bearing rock of the mineral region is a porous limestone, prevailing throughout Grant, Lafayette, and Iowa counties, comprising four-fifths of the "lead district" of the upper Mississippi; the remaining one-fifth being in the States of Illinois and Iowa.

Deposits of iron ore, water limestone, and beds of gypsum, together with other varieties of minerals, are found in localities more or less numerous throughout the limestone region.

All of that section of the State which lies between Lake Superior on the north and the Falls of St. Anthony on the Mississippi, and the falls of the other rivers flowing southerly, is primative in its prevailing geological character; and it is within this primitive region that the copper mines of Lake Superior are found—probably the richest in the world, and apparently inexhaustible.

In all that portion of the State lying between the primitive region just described and the limestone formation of the south and east, the transition sandstone prevails; interspersed with limestone and more sparsely with rock of a primitive character. This formation comprises that section of country drained by the Wisconsin and other rivers tributary to the Upper Mississippi and below the falls of those streams. Within this geological district are found quarries of white marble, which promise to be abundant and valuable.

The character of the soil of Wisconsin is, of course, indicated to some extent by its geological features. The limestone district of the State is overspread by a soil and sub-soil similar to that which prevails in other portions of the great valley, and unsurpassed by any in fertility. It is the distinction of the mineral region of Wisconsin that it is overspread by a surface of the very finest agricultural qualities; contrary to the general fact, that a mining district is worthless for the purpose of culture.

Proceeding northerly and westwardly of the dividing ridge between the waters of Lake Michigan and those that flow into the Upper Mississippi, the soil will be observed to become more sandy and porous—a character which will be found to prevail throughout the sandstone region above described. This portion of the State admits of easy cultiva-

tion. The soil is warm and highly productive, and the growth luxuriant.

FACE OF THE COUNTRY, SCENERY, &c.—The surface of Lake Michigan is about six hundred feet above the level of the ocean. The surface of the State is every where undulating; not hilly, much less mountainous. Its average level below latitude 46° is about 250 feet above Lake Michigan; seldom falling so low as 100 feet, and rarely rising above 400 feet. The highest of the blue mounds, on the line between the counties of Dane and Iowa, rises 1,170 feet above Lake Michigan, and is perhaps the most elevated land in Wisconsin.

There is a remarkable depression in the surface of the country, running across the State, from Green Bay to the Mississippi, the bottom of which furnishes the channels of the Fox and the lower Wisconsin. The portage between these two rivers is less than two miles.

This portage is but 223 feet above the level of Lake Michigan; being the elevation of the dividing ridge, at this point, between the basin of the lakes and the valley of the Mississippi. At the mouth of the Wisconsin, the western terminus of this depression is about 60 feet above Lake Michigan; that of Lake Winnebago, at the head of the rapids of the Fox, being 160 feet.

From the north into this valley flow the upper Wisconsin and the Wolf, and on the south the country rises to the level of the head waters of the Rock, 316 feet above the surface of Lake Michigan. Thence there is a gradual inclination of the surface southerly to the line of the State; the elevation of which, at the egress of the Rock, is 128 feet above the lake.

It is characteristic of the State that the streams uniformly flow in beds but very slightly depressed below the general level of the adjacent country, and present no difficulty in the way of the construction of roads of easy grade, transversely, as well as in the line of the water courses. There is also, from this cause, much less to be apprehended from the sudden and destructive swell of the volume of water from copious rains—two considerations which they know best how to appreciate who have dwelt where rivers and their branches make their beds in deep vallies, while the general elevation of the country is but a succession of intervening ridges.

Such being a general description of the surface of Wisconsin, the immigrant will not look for Alpine scenery, or the bolder and sublimer features of the country of high mountain and deep valley. But in all that constitutes the beauty of the landscape, whether in the vestments of nature, or in

those capabilities which cultivation can alone develope, Wisconsin is without a rival. Among her ten thousand undulations there is scarcely one which lifts its crown above its fellows which does not disclose to the prophetic eye of taste a possible Eden, a vision of loveliness which time and the hand of cultivation will not fail to realize and to verify.

The only forests of a growth approximating towards that of western New York, Pennsylvania, and northern Ohio, are found in a small portion of the Rock river valley, and in a narrow border on Lake Michigan, widening as it is traced northerly; evergreens becoming more freely interspersed, and finally predominating.

The evergreen growth prevails in the vallies of the streams of the sand-stone district. The most extensive pinery in the State is found on the upper Wisconsin. The same valuable growth prevails in the valleys of the Wolf, the La Crosse, the Black, the Chippewa, the St. Croix, and other streams penetrating the stone region.

Aside from these localities and the primitive region of Lake Superior, the elements of the Wisconsin landscape are rolling prairie, the sparse woodland, the opening, the natural meadow, and the lake. These, in their infinite variety of combination, and in their unrivalled loveliness, make up the natural scenery of the State. Three hundred and fifty thousand souls have, in a day, as it were, found a happy home in Wisconsin. But her millions of acres, equally beautiful, and all untouched, are still courting the hand of cultivation, and the adornings of art.

Education.—The bounty of Congress has set apart the 16th section of every township in the State for the support and maintenance of common schools. From this source nearly 1,000,000 acres will accrue to the State, the proceeds of the sales of which are to constitute a permanent fund, the income of which is to be annually devoted to the great purpose of the grant.

This magnificent foundation has been wisely enlarged by constitutional provisions, giving the same direction to the donation of 500,000 acres, under the act of 1841, and the five per cent. reserved on all sales of government lands within the State. A still larger addition will accrue from the grant of the swamp and overflowed lands, which the settlement of the country, the lapse of time, and easy processes of reclamation, will convert into the best meadow land in the world, and a large portion, ultimately, into arable.

For the support of a State university, seventy-two sections of choice land, comprising 46,080 acres, have been already

granted, and it is not improbable that this provision may be also enlarged by subsequent grants. If these trusts are administered with ordinary wisdom, the educational funds of Wisconsin cannot be less, ultimately, than $3,000,000, and may reach $5,000,000.

The university is already chartered and in successful operation. The school system has been wisely designed, and the progress of organization, under the law, keeps pace with the progress of settlement. There are already not far from two thousand five hundred school districts in the State. The annual income to be divided has already reached $70,000, and will be greatly increased from year to year.

The system contemplates, by the introduction of union schools, to extend academic instruction to each town in the State.

In addition to this munificent public provision for common and liberal education, there are, in different parts of the State, educational incorporations, both academic and collegiate, founded on private subscription. The most promising of these are the college at Beloit, well endowed and in successful operation; and similar institutions at Milwaukie, Racine, and Waukesha in eastern Wisconsin, and at Appleton in the north.

Indeed, in none of the new States, even in the northwest, will the means of education be more ample; and in none is there a more rational appreciation of the importance of this paramount public interest.

In Wisconsin, as in the other States of this Union, there is, and ever will be, an entire freedom of ecclesiastical organization, and an equal protection of every religious institution and arrangement, conservative of good morals, and protective of the highest and most enduring interests of man.

In consideration of all these elements of prosperity, economical and social, such as have never, till now, gathered around the opening career of a new political community, there is little ground for wonder that the early growth of Wisconsin has been without a parallel in the history of States; and it may be very safely assumed that the advent of men and capital to that favored portion of the northwest will continue, in increasing volume, for many years to come.

MINING.—To the practical miner, as capitalist or operative, *the lead region of the upper Mississippi offers the most substantial inducements to settlement.* The exceeding abundance and richness of the mineral, the comparative ease with which it may be mined, and the high price it commands the moment it is brought to the surface, open to the industrious and prudent operator a highway to wealth.

New *leads* of the richest promise have been recently discovered in the mineral district, and an increasing emigration to that State promises to replace the California draft, and to meet the growing demand for the mineral.

The steady advance in the price of lead which has prevailed for five years past is indicative of a gradual but decided extension of its uses in the arts. There is no ground for apprehension that the supply will outrun the demand, or be able to work a reduction of the wages of labor and profits of capital in this industrial occupation for some years to come.

The copper mines of Lake Superior are of established celebrity throughout the world, and open an inviting field for enterprise. The mining interest in that region is fast losing its character of adventure, and is attracting the attention of the prudent capitalist and the practical miner, as a remunerative branch of business.

The iron mines of Wisconsin have not yet been opened to any extent, but are worthy of the attention of the immigrant. There are rich localities of ore near the head-waters of the Rock, and on the upper Mississippi and its branches.

LUMBERING.—To the lumberman the pineries of Wisconsin present inducements for investment and settlement which can be hardly overrated. That of the upper Wisconsin and its tributaries is the most extensive, and distinguished still more for the fine quality than the inexhaustible quantities of its timber. The other localities of the white pine and other evergreens are mainly on the Wolf, the great northern affluent of the Fox, and on the LaCrosse, the Black, and the St. Croix branches of the upper Mississippi.

The rapids of these streams furnish abundant water power for the manufacture of lumber, and on the annual spring rise, and occasional freshets at other seasons of the year, the yield of the mills is floated from the Wolf into Lake Winnebago and the lower Fox, and from the other streams into the Mississippi.

Scarcely ten years have elapsed since the Alleghany pine of western New York and Pennsylvania had undisputed possession of the market, not only of the Ohio valley, but of the Mississippi and its tributaries above New Orleans, at which point it competed with the lumber of Maine and New Brunswick.

The course of the lumber trade may now be considered as permanently changed. The pineries of Wisconsin now control and will soon hold exclusive possession of the market of the valleys of the Mississippi and its great western affluents.

AGRICULTURE.—But it is to that great body of emigrants who are seeking a home in the west, as cultivators of the soil,

that the natural capabilities of Wisconsin most of all address themselves.

The prairies of Wisconsin, unlike those of Illinois, Missouri, Iowa, and Minnesota, are none of them extensive, and are so skirted and belted by timber as to be adapted to immediate and profitable occupation and improvement to their very centre.

The openings, which comprise a large portion of the finest land of Wisconsin, owe their present condition to the action of the annual fires, which have kept under all other forest growth except those varieties of oak which can withstand the sweep of that element.

This annual burning of an exuberant growth of grass and of under-brush has been adding, perhaps for ages, to the productive power of the soil, and preparing it for the ploughshare, without the life-long process which was necessary to bring the densely timbered lands of Ohio to the same advanced point of preparation for immediate and profitable cultivation.

It is the great fact, that nature has thus "cleared up" Wisconsin to the hand of the settler, and enriched it by yearly burnings, and has at the same time left sufficient timber on the ground for fence and firewood, that explains in a great measure the capacity it has exhibited, and is now exhibiting, for rapid settlement and early maturity.

There is another fact important to be noticed in this connexion. The low level prairie, or natural prairie, of moderate extent, is so generally distributed over the face of the country that a settler on a fine section of arable land finds on his own farm, or its immediate neighborhood, abundant pasturage for his stock in summer on the open range, and hay for the winter for the cutting, the bounty of nature supplying his need in this behalf till the cultivated grasses may be introduced and become sufficient for his use.

It is this very rapid transition of a quarter section of government land into an *old farm*, without a tithe of the privations and hardships which hung around the lifetime of the early pioneers of Ohio, which distinguishes the early settlement of Wisconsin.

Every description of husbandry suitable to the latitude may be successfully prosecuted. In addition to the usual routine of crops, the business of stock-raising, of dairy, of wool-growing, and the culture of flax, are beginning to engage the attention of settlers, with promise of eminent success.

The steady and exclusive prosecution of agriculture on the fertile soil of the mineral district has the advantage of an active home market and ready pay. Hitherto, in consequence

of the tempting and absorbing nature of the mining business, the cultivation of the soil has given place to "prospecting" for mineral. Agricultural lands, therefore, though of the very first order of fertility, have been neglected, and may be purchased at very low rates.

The same general remarks apply to the agricultural lands in the pineries. Though of different elements from the soil which prevails in the limestone region, it is easily worked, and of undoubted productive power. The home market is still more importunate in its demands, and as promptly remunerative.

And of the millions of acres comprised in the area of Wisconsin, by far the greatest portion may still be entered at the land offices at $1 25 per acre, paid down, in specie, or in land warrants.

Several hundred thousand acres of school lands in the older counties are now open to entry at their appraised value at the office of the Secretary of State at the capitol in Madison; one-tenth of the purchase money down, and the residue on a long credit at seven per cent. per annum.

Choice lands, located for the maintenance of the State university, may also be entered at their appraised value, at the office of the Secretary of State, on even better terms of payment than the school lands.

It is worth while to add, that the California emigration, and other temporary causes, have thrown in market, at reduced prices, many improved farms in choice locations in the older counties. The opportunity for investment thus offered is worthy of the attention of the emigrant; and facts relative thereto may be easily ascertained on inquiry at private land offices in the largest towns in the State.

MANUFACTURES.—The artizan will find a fair field for his labor and for the employment of capital in Wisconsin.

For the ordinary mechanic arts, which are inseparable from agricultural thrift anywhere, the demand is importunate. Builders of every class and degree are liberally paid in the larger towns. Millwrights are sure to find employment in town or country, whether the mill power be water or steam. Carriage making, from the manufacture of the railroad car to the simple vehicle, whether useful or tasteful, is greatly in demand, and cannot fail to do well.

Among the larger operations of manufacture, those of flour and lumber are becoming sources of profit to the capitalist and laborer, and beneficial to the farmer. Woollen, flax, and cotton mills must soon become fixed facts in Wisconsin. The raw material for the two former will soon be among the larger and more profitable home productions of her agriculture,

while the supply of cotton will, through the channel of the Mississippi, be more direct, safe, and easy than by sea to towns on the Atlantic border. For all these operations there is abundant water power in suitable locations.

For the construction of steamboats, and every variety of lake craft, the western coast of Lake Michigan is eminently adapted; and it may be reasonably anticipated that a large share of the ship and boat building for these inland waters will be done in the ports on that shore. The iron and lumber of northwestern Wisconsin will attract to that quarter much of the boat building for the Mississippi and its branches.

Nor is it to be presumed that Wisconsin will be long tributary to Buffalo or Pittsburg for its engines, whether for the steamer, the locomotive, or the mill. No point on the lake presents more advantages than Milwaukee for foundries, for castings and machinery of every description.

All these, and the thousand unenumerated arts which go to constitute the social maturity of a State, will be hospitably entertained, and meet with an early development in Wisconsin.

TRADE.—Bordered on the east and the west, throughout its entire length, by Lake Michigan on the one hand and the Mississippi on the other, every portion of the State has easy access to the ocean, and a complete command of the eastern and southern markets—an advantage which will be appreciated by those who are acquainted with the mutations, as well as the fixed laws of trade.

On the Michigan side have sprung up the towns Milwaukee, Racine, Kenosha, Ozaukee, Manitowoc, Sheboygan, and Green Bay, all flourishing and promising.

The growth of Milwaukee, like that of the State of which it is the commercial mart, has been unexampled in the history of American cities. Scarcely visited by the white man in 1835, it has now (1852) a population of twenty-five thousand souls.

On the Mississippi border the elements of wealth, bountiful as nature has been, have scarcely begun to be developed; and the question is still open as to the position of its principle commercial mart. The more prominent points at present are Potosi, Prairie du Chien, Prairie La Crosse, and Willow river.

Of the interior towns, there are in the lead district Mineral Point and Platteville; in the basin of the Fox and Lower Wisconsin, Fort Winnebago, Oshkosh, Fond du Lac, and Menasha; on the banks of the Rock, Watertown, Janesville, and Beloit; between the Rock and Lake Michigan, Whitewater and Waukesha.

Madison, the capital of the State, the seat of justice of Dane county, and the seat of the university, is beautifully located in the basin of the four lakes, midway between Lake Michigan and the Mississippi.

Janesville, the most populous of the interior towns, is the seat of the State institution for the education of the blind.

The population of the villages of the interior above enumerated ranges from twelve hundred to four thousand each. The list of towns might be greatly enlarged, did it fall within the scope of this article to do more than to present to the emigrant a general view of the natural capabilities, and the present aspects of Wisconsin.

All around is in rapid, though unequal progression, and the town unenumerated to-day may take its place in the first class to-morrow.

INTERNAL IMPROVEMENTS.—Plank roads are in process of construction, connecting the leading towns of the interior with each other, and all with the lake and the river. Most of the towns on Lake Michigan are penetrating the interior with the facilities of trade and intercourse, to the mutual advantage of themselves and the country.

Of the several railroads projected and chartered, most of which are destined to completion at an early day, two—the Milwaukee and Mississippi, and the Rock River Valley roads—are already under progress.

Cars are already running over the track of the former, from Milwaukee to Eagle Prairie, nearly forty miles. It will be finished to Rock river this season, and to the Wisconsin during the summer of 1853. Another year will carry it through to the Mississippi. The track is laid with heavy T rail, and the road, with all its appurtenances, will be a work of the first class. This road will pass through Madison, the capital of the State, and terminate at or near the mouth of the Wisconsin.

The Rock River Valley road, connecting Fond du Lac with Janesville, and to be ultimately extended to Chicago, has been commenced simultaneously at Fond du Lac and Janesville. Several miles have been graded, and are nearly ready for the rail.

A road has been chartered to run from Fort Winnebago, through Madison and Janesville, to Beloit; there to connect with a branch from the Chicago and Galena road; thus furnishing a continuous route from the valley of the Fox and Wisconsin, through the capital of the State, to Chicago. This route is attracting the attention of capitalists; and the business of the country demands and will effect the early construction of the road, by means of which a continuous

line of railroad travel to the Atlantic will be secured to central Wisconsin.

The lake shore road from Milwaukee, through Racine and Kenosha, to Chicago, is an enterprise of general interest, and the construction of it cannot be long deferred.

Other railroads to intersect the State in various directions, either new routes or extensions of old ones, are projected. Some of these, doubtless, will be carried through, though the period of their completion is more distant than that of those aboved named.

The State is now in the administration of a large trust fund, derived from the sales of lands granted by Congress for the construction of a steamboat communication from Green Bay to the Mississippi, along the bed of the Fox and Wisconsin rivers. This great work, when completed, is destined to form an important and valuable water communication between the basin of the St. Lawrence and the great valley of the Mississippi. Once completed, heavy freight between St. Louis and New York will inevitably seek this channel, in preference to that by the Illinois and Michigan canal, as now it seeks the latter in preference to the eastern routes.

This great work, furnishing the most capacious outlet from our MEDITERRANEAN RIVER into our inland seas, and thence through the enlarged Erie canal and the Hudson into the Atlantic, will be completed at no very distant day.

The improvement of the harbors on Lake Michigan is imperiously demanded at the hands of the general government, and in the existing condition of the treasury cannot be longer delayed. And manifestly no object of expenditure could be more eminently national than the improvement of the outlet of Lake Superior, affording to the ordinary lake navigation free access to the copper region of northern Michigan and Wisconsin.

In connexion with the subject of works of general utility, it remains only to say that the telegraphic wires made early entry into Wisconsin. The line from Chicago to Milwaukee, and thence to Madison and Galena, has been for some years in operation. A net work of wires now overspreads the State, and all the larger towns are brought into the circuit of instantaneous communication, and into enjoyment of the advantages of this commerce of thought and feeling.

It need hardly be said, in conclusion, that these evidences of social advancement which meet the immigrant on his arrival in Wisconsin, and rapidly gather around the settler in his new home, contrast cheerfully and hopefully with the privation, the hardship, the toil and the danger which fifty years ago environed the pioneer in the forests of Ohio.

Indeed, looking at the fact that nature has prepared the soil of Wisconsin for the plough, and its herbage for the immediate sustenation of domestic animals, contemplating the appliances of civilization, which art brings to the very doors of his cabin, he will not doubt—as in truth he need not—that twenty years will do for Wisconsin what fifty years has barely sufficed to do for Ohio; that in all that goes to constitute a healthy and refined civilization Wisconsin is destined to a more rapid development and an earlier maturity than has heretofore marked the history of States under the most favorable conditions.

These views are not extravagant. They are conclusions fully warranted by the premises. The predictions of to-day will be sober history in 1872.

POPULATION OF WISCONSIN.

Counties.	1840.	1842.	1846.	1847.	1850.
Adams	.....	.....	.....	.....	187
Brown	2,107	2,146	2,662	2,914	6,222
Calumet	275	407	836	1,060	1,746
Chippewa	.....	.....	.....	.....	615
Columbia	.....	.....	1,969	3,791	9,565
Crawford	1,503	1,449	1,444	1,409	2,399
Dane	314	776	8,289	10,935	16,654
Dodge	67	149	7,787	14,905	19,140
Fond du Lac	139	295	3,544	7,459	14,512
Grant	3,926	5,937	12,034	11,720	16,169
Green	933	1,594	4,758	6,487	8,583
Iowa and Richland	3,978	5,029	14,906	7,963	10,479
Jefferson	914	1,638	8,680	11,464	15,339
Kenosha	.....	.....	.....	.....	10,730
La Fayette	.....	.....	.....	9,335	11,556
La Pointe	.....	.....	.....	367	595
Manitowoc	235	263	629	1,285	3,713
Marathon	.....	.....	.....	.....	466
Marquette	18	59	986	2,261	8,642
Milwaukee	5,605	9,565	15,922	22,791	31,119
Portage	1,623	646	931	1,504	1,267
Racine	3,475	6,318	17,983	19,538	14,971
Richland	.....	.....	.....	.....	903
Rock	1,701	2,867	12,405	14,720	30,717
Saint Croix	.....	.....	1,419	1,674	624
Sauk	102	393	1,003	2,178	4,372
Sheboygan	133	227	1,637	5,580	8,386
Walworth	2,611	4,618	13,439	15,039	17,866
Washington	343	965	7,473	15,447	19,476
Waukesha	.....	.....	13,793	15,866	19,324
Winnebago	135	143	732	2,748	10,167
Total	30,945	44,478	155,277	210,546	305,566

From the above census returns it will be seen that the population of Wisconsin has increased in greater ratio than any other State in the Union. The population at this date, May, 1855, can be safely estimated at 450 or 500,000.

ORGANIZATION OF THE EXECUTIVE DEPARTMENTS OF THE GOVERNMENT OF THE UNITED STATES.

The annexed description of the organization and business of the different departments of the government, which has been published in the official paper, may be of use to persons having business in any of the departments, and will be interesting to those in every part of the Union who have business at the capital, or desire to understand the machinery of the government:

DEPARTMENT OF STATE.

The whole machinery employed to conduct the business arising out of our foreign relations with all the powers of the world is far more simple than is generally conceived. The number employed in the Department of State of the United States is only seventeen, as follows: One Secretary of State, (Hon. William L. Marcy,) one Assistant Secretary of State, one chief clerk, twelve clerks, one translator, and one librarian.

Diplomatic Branch.—This branch of the State Deparment has charge of all correspondence between the department and other diplomatic agents of the United States abroad and those of foreign powers accredited to this government. In it all diplomatic instructions sent from the department, and communications to commissioners under treaties of boundaries, &c., are prepared, copied and recorded; and all of like character received are registered and filed, their contents being first entered in an analytic table or index.

Consular Branch.—This branch has charge of the correspondence, &c., between the department and the consuls and commercial agents of the United States. In it instructions to those officers, and answers to their dispatches and to letters from other persons asking for consular agency, or relating to consular affairs, are prepared and recorded.

The Disbursing Agent.—He has charge of all correspondence and other matters connected with accounts relating to any fund with the disbursement of which the department is charged.

The Translator.—His duties are to furnish such translations as the department may require. He also records the commissions of consuls and vice-consuls, when not in English, upon which exequaturs are issued.

Clerk of Appointments and Commissions.—He makes out and records commissions, letters of appointment, and nominations to the Senate; makes out and records exequaturs,

and records, when in English, the commissions on which they are issued. Has charge of the library.

Clerk of the Rolls and Archives.—He takes charge of the rolls or enrolled acts and resolutions of Congress, as they are received at the department from the President; prepares the authenticated copies thereof which are called for; prepares for and superintends their publication, and that of treaties, in the newspapers and in book form; attends to their distribution throughout the United States, and that of all documents and publications in regard to which this duty is assigned to the department; writing and answering all letters connected therewith. Has charge of all Indian treaties and business relating thereto.

Clerk of Authentications and Copyrights.—He has charge of the seals of the United States and of the department, and prepares and attaches certificates to papers presented for authentication; receives and accounts for the fees. Has charge of publications transmitted to the department under the laws relating to copyrights; records and indexes their titles; records all letters from the department other than the diplomatic and consular.

Clerk of Pardons and Passports.—He prepares and records pardons and remissions, and registers and files the petitions and papers on which they are founded. Makes out and records passports; keeps a daily register of all letters other than diplomatic and consular received, and of the disposition made of them.

ATTORNEY GENERAL'S OFFICE.

Hon. Caleb Cushing, Attorney General of the United States; R. H. Gillet, esq., chief clerk. The ordinary business of this office may be classified under the following heads:

1. Official opinions on the current business of the government, as called for by the President, by any head of department, or by the Solicitor of the Treasury.

2. Examination of the titles of all land purchased, as the sites of arsenals, custom-houses, light-houses, and all other public works of the United States.

3. Applications for pardons in all cases of conviction in the courts of the United States.

4. Applications for appointment in all the judicial and legal business of the government.

5. The conduct and argument of all suits in the Supreme Court of the United States in which the government is concerned.

To these ordinary heads of the business of the office are added at the present time the following, viz:

First. The direction of all appeals on land claims in California.

Second. The codification and revision of the laws of the District of Columbia.

INTERIOR DEPARTMENT.

Secretary of the Interior Department, Hon. Robert McClelland, of the State of Michigan. Its clerical force consists of one chief clerk, (George C. Whiting, esq.,) one disbursing agent, and ten other regular clerks; and to its supervision and management are committed the following branches of the public service:

1st. *The Public Lands.*—The chief of this bureau is called the "Commissioner of the General Land Office." The Land Bureau is charged with the survey, management, and sale of the public domain, and the issuing of titles therefor, whether derived from confirmations of grants made by former governments, by sales, donations, or grants for schools, military bounties, or public improvements, and likewise the revision of Virginia military bounty land claims, and the issuing of scrip in lieu thereof. The Land Office also audits its own accounts. The present Commissioner is Mr. John Wilson, of the District of Columbia. Its principal officers are a recorder, chief or principal clerk of public lands, principal clerk of private land claims, and principal clerk of surveys, all of whom are appointed by the President and confirmed by the Senate, besides a draughtsman, assistant draughtsman, and some 106 clerks of various grades.

2d. *Pensions.*—The present head of this bureau is the Hon. Lorin P. Waldo, of Connecticut. The Commissioner is charged with the examination and adjudication of all claims arising under the various and numerous laws passed by Congress granting bounty lands or pensions for military or naval services in the revolutionary and subsequent wars in which the United States have been engaged. He has one chief clerk, (S. Cole, esq.,) and a permanent corps consisting of some seventy other clerks, to which Congress, to enable him to meet the extraordinary requirements of the new bounty land law, has added a temporary force of about fifty clerkships of different denominations.

3d. *Indians.*—Commissioner of Indian Affairs, Hon. George W. Manypenny, of Ohio. He is provided with a chief clerk and about fifteen other subordinate clerks.

4th. *Patent Office.*—To this bureau is committed the execu-

tion and performance of all "acts and things touching and respecting the granting and issuing of patents for new and useful discoveries, inventions, and improvements;" the collection of statistics relating to agriculture; the collection and distribution of seeds, plants, and cuttings. It has a chief clerk—who is by law (as at the present time) the Acting Commissioner of Patents in the absence of the Commissioner—ten principal and ten assistant examiners of patents, besides some dozen other subordinate permanent clerks.

Besides these four principal branches of this new executive department, the organic act of 1849 transferred to it from the Treasury Department the supervision of the accounts of the United States marshals and attorneys and the clerks of the United States courts; the management of the lead and other mines of the United States, and the affairs of the penitentiary of the United States in the District of Columbia; and from the State Department the duty of taking and returning the censuses of the United States, and of supervising and directing the acts of the Commissioner of Public Buildings. By recent acts of Congress, also, the hospital for the insane of the army and navy and of the District of Columbia is under the management of this department; and, by assignment from the President, it has added to its long list of duties the survey and demarcation of the unsettled boundary lines between the States and Territories and bordering nations.

This department is at present very inconveniently separated and located, and should be appropriately and permanently provided for. The Secretary's office occupies a portion of the new Patent Office building, the General Land Office a portion of the Treasury building, and the Pension Office a portion of "Winder's building," now the property of the government, whilst the Indian Office is located in premises not fire-proof and rented of their private owners.*

TREASURY DEPARTMENT.

The Treasury Department consists of the offices of the Secretary of the Treasury, two comptrollers, commissioner of the customs, six auditors, treasurer, register, solicitor, light-house board, and coast survey.

The following is a brief indication of the duties of these several offices and of the force employed therein respectively:

Secretary's Office.—Hon. James Guthrie, Secretary of the Treasury; Hon. P. G. Washington, Assistant Secretary; one engineer in charge; one architect and three draughtsmen temporarily employed, and twenty-three clerks. The Secre-

* The Census Office, when existing, is attached to this department.

tary of the Treasury is charged with the general supervision of the fiscal transactions of the government, and of the execution of the laws concerning the commerce and navigation of the United States. He superintends the survey of the coast, the light-house establishment, the marine hospitals of the United States, and the construction of certain public buildings for custom-houses and other purposes.

First Comptroller's Office.—Elisha Whittlesey, esq., Comptroller, and fifteen clerks. He prescribes the mode of keeping and rendering accounts for the civil and diplomatic service as well as the public lands, and revises and certifies the balances arising thereon.

Second Comptroller's Office.—John M. Brodhead, esq., Comptroller, and seventeen clerks. He prescribes the mode of keeping and rendering the accounts of the army, navy, and Indian departments of the public service, and revises and certifies the balances arising thereon.

Office of Commissioner of the Customs.—Hugh J. Anderson, esq., Commissioner, and eleven clerks. He prescribes the mode of keeping and rendering the accounts of the customs revenue and disbursements, and for the building and repairing custom-houses, &c., and revises and certifies the balances arising thereon.

First Auditor's Office.—Thomas L. Smith, esq., First Auditor, and nineteen clerks. He receives and adjusts the accounts of the customs revenue and disbursements, appropriations and expenditures on account of the civil list and under private acts of Congress, and reports the balances to the Commissioner of the Customs and the First Comptroller, respectively, for their decision thereon.

Second Auditor's Office.—Philip Clayton, esq., Second Auditor, and twenty-one clerks. He receives and adjusts all accounts relating to the pay, clothing, and recruiting of the army, as well as armories, arsenals, ordinance, and all accounts relating to the Indian department, and reports the balances to the Second Comproller for his decision thereon.

Third Auditor's Office.—Robert J. Atkins, esq., Third Auditor, and seventy-eight clerks. He receives and adjusts all accounts for subsistence of the army, fortifications, military academy, military roads, and the quartermaster's department, as well as for pensions, claims arising from military services previous to 1816, and for horses and other property lost in the military service, under various acts of Congress, and reports the balances to the Second Comptroller for his decision thereon.

Fourth Auditor's Office.—Aaron O. Dayton, esq., Fourth Auditor, and sixteen clerks. He receives and adjusts all

accounts for the service of the Navy Department, and reports the balances to the Second Comptroller for his decision thereon.

Fifth Auditor's Office.—Josiah Minot, esq., Fifth Auditor, and six clerks. He receives and adjusts all accounts for diplomatic and similar services performed under the direction of the State Department, and reports the balances to the First Comptroller for his decision thereon.

Sixth Auditor's Office.—William F. Phillips, esq., Sixth Auditor, and one hundred and one clerks. He receives and adjusts all accounts arising from the service of the Post Office Department. His decisions are final, unless an appeal be taken in twelve months to the First Comptroller; and he superintends the collection of all debts due the Post Office Department.

Treasurer's Office.—Samuel Casey, esq., Treasurer, and thirteen clerks. He receives and keeps the moneys of the United States in his own office, and that of the depositories created by the act of the 6th of August, 1846, and pays out the same upon warrants drawn by the Secretary of the Treasury, countersigned by the First Comptroller, and upon warrants drawn by the Postmaster General and countersigned by the Sixth Auditor and recorded by the Register. He also holds public moneys advanced by warrant to disbursing officers, and pays out the same upon their checks.

Register's Office.—Finley Bigger, register, and twenty-nine clerks. He keeps the accounts of public receipts and expenditures; receives the returns and makes out the official statement of commerce and navigation of the United States; and receives from the First Comptroller and Commissioner of Customs all accounts and vouchers decided by them, and is charged by law with their safe-keeping.

Solicitor's Office.—Francis B. Streeter, Solicitor, and six clerks. He superintends all civil suits commenced by the United States, and instructs the United States attorneys, marshals, and clerks in all matters relating to them and their results. He receives returns from each term of the United States courts, showing the progress and condition of such suits; has charge of all lands and other property assigned to the United States in payment of debts, and has power to sell and dispose of the same for the benefit of the United States.

Lighthouse Board.—Hon. James Guthrie, president; Com. W. B. Shubrick, U. S. navy, chairman; Gen. J. G. Totten, U. S. army; Col. James Kearney, U. S. army; Prof. A. D. Bache, Superintendent of Coast Survey; Prof. Joseph Henry, Secretary of Smithsonian Institution; Commander

S. F. Dupont, U. S. navy; Lieut. Thornton A. Jenkins, U. S. navy, secretary; Capt. E. L. F. Hardcastle, U. S. army, secretary, and five clerks. This board directs the building and repairing of light-houses, light-vessels, buoys, and beacons, contracts for supplies of oil, &c.

Coast Survey.—Alex. D. Bache, esq., superintendent, and thirty-eight assistant draughtsmen, &c.

NAVY DEPARTMENT.

The Navy Department consists of the Navy Department proper, being the office of the Secretary and of five bureaus attached thereto, viz: Bureau of Navy Yards and Docks, Bureau of Construction, Equipment, and Repair, Bureau of Provisions and Clothing, Bureau of Ordnance and Hydrography, and the Bureau of Medicine and Surgery. The following is a statement of the duties of each of these offices and of the force employed therein:

Secretary's Office.—Hon. James. C. Dobbin, Secretary of the Navy; Charles W. Welsh, esq., chief clerk, and eleven clerks. The Secretary of the Navy has charge of every thing connected with the naval establishment, and the execution of all laws relating thereto is entrusted to him, under the general direction of the President of the United States, who, by the Constitution, is commander-in-chief of the army and navy. All instructions to commanders of squadrons and commanders of vessels, all orders of officers, commissions of officers both in the navy and marine corps, appointments of commissioned and warrant officers, orders for the enlistment and discharge of seamen, emanate from the Secretary's office. All the duties of the different bureaus are performed under the authority of the Secretary, and their orders are considered as emanating from him. The general superintendence of the marine corps forms also a part of the duties of the Secretary, and all the orders of the commandant of that corps should be approved by him.

Bureau of Navy Yards and Docks.—Commodore Joseph Smith, chief of the bureau, four clerks, one civil engineer, and one draughtsman. All the navy yards, docks, and wharves, buildings and machinery in navy yards, and everything immediately connected with them, are under the superintendence of this bureau.

Bureau of Construction, Equipment, and Repair.—John Lenthall, esq., chief of the bureau, eight clerks, and one draughtsman. The office of the engineer-in-chief of the navy, Daniel B. Martin, esq., is attached to this bureau, who is assisted by three assistant engineers. This bureau has

charge of the building and repairs of all vessels-of-war, purchase of materials, and the providing of all vessels with their equipments, as sails, anchors, water-tanks, &c. The engineer-in-chief superintends the construction of all marine steam-engines for the navy, and, with the approval of the Secretary, decides upon plans for their construction.

Bureau of Provisions and Clothing.—H. Bridge, purser United States navy, chief of bureau, and four clerks. All provisions for the use of the navy, and clothing, together with the making of contracts for furnishing the same, come under the charge of this bureau.

Bureau of Ordnance and Hydrography.—Commodore Charles Morris, chief of bureau, four clerks, and one draughtsman. This bureau has charge of all ordnance and ordnance stores, the manufacture or purchase of cannon, guns, powder, shot, shells, &c., and the equipment of vessels-of-war, with everything connected therewith. It also provides them with maps, charts, chronometers, barometers, &c., together with such books as are furnished ships-of-war. "The United States Naval Observatory and Hydrographical Office" at Washington and the Naval Academy at Annapolis are also under the general superintendence of the chief of this bureau.

Bureau of Medicine and Surgery.—Dr. William Whelan, surgeon United States navy, chief of bureau, one passed assistant surgeon United States navy, and two clerks. Everything relating to medicines and medical stores, treatment of sick and wounded, and management of hospitals, comes within the superintendence of this bureau.

POST OFFICE DEPARTMENT.

Hon. James Campbell, Postmaster General. The direction and management of the Post Office Department are assigned by the Constitution and laws to the Postmaster General. That its business may be the more conveniently arranged and prepared for his final action, it is distributed among several bureaus, as follows: The Appointment Office, in charge of the First Assistant Postmaster General; the Contract Office, in charge of the Second Assistant Postmaster General; the Finance Office, in charge of the Third Assistant Postmaster General; and the Inspection Office, in charge of the chief clerk.

Appointment Office.—Horatio King, esq., First Assistant Postmaster General, and nineteen clerks. To this office are assigned all questions which relate to the establiishment and discontinuance of post offices, changes of sites and names, appointment and removal of postmasters and route and local

agents, as also the giving of instructions to postmasters. Postmasters are furnished with marking and rating stamps and letter balances by this bureau, which is charged also with providing blanks and stationery for the use of the department, and with the superintendence of the several agencies established for supplying postmasters with blanks. To this bureau is likewise assigned the supervision of the ocean mail steamship lines, and of the foreign and international postal arrangements.

Contract Office.—William H. Dundas, esq., Second Assistant Postmaster General, and twenty-six clerks. To this office is assigned the business of arranging the mail service of the United States, and placing the same under contract, embracing all correspondence and proceedings respecting the frequency of trips, mode of conveyance, and times of departures and arrivals on all the routes; the course of the mail between the different sections of the country, the points of mail distribution, and the regulations for the government of the domestic mail service of the United States. It prepares the advertisements for mail proposals, receives the bids, and takes charge of the annual and occasional mail lettings and the adjustment and execution of the contracts. All applications for the establishment or alteration of mail arrangements and the appointment of mail messengers should be sent to this office. All claims should be submitted to it for transportation service not under contract, as the recognition of said service is first to be obtained through the contract office as a necessary authority for the proper credits at the Auditor's office. From this office all postmasters at the ends of the routes receive the statement of mail arrangements prescribed for the respective routes. It reports weekly to the Auditor all contracts executed and all orders affecting accounts for mail transportation; prepares the statistical exhibits of the mail service and the reports of the mail lettings, giving a statement of each bid; also of the contracts made, the new service originated, the curtailments ordered, and the additional allowances granted within the year.

Finance Office.—John Marron, esq., Third Assistant Postmaster General, and twenty-one clerks. To this office are assigned the supervision and management of the financial business of the department not devolved by law upon the Auditor, embracing accounts with the draft offices and other depositories of the department, the issuing of warrants and drafts in payment of balances reported by the Auditor to be due to mail contractors and other persons, the supervision of the accounts of offices under orders to deposite their quarterly

balances at designated points, and the superintendence of the rendition by postmasters of their quarterly returns of postages. It has charge of the dead-letter office, of the issuing of postage stamps and stamped envelopes for the pre-payment of postage, and of the accounts connected therewith.

To the Third Assistant Postmaster General all postmasters should direct their quarterly returns of postage; those at draft offices, their letters reporting quarterly the nett proceeds of their offices, and those at depositing offices their certificates of deposite. To him should also be directed the weekly and monthly returns of the depositories of the department, as well as all applications and receipts for postage stamps and stamped envelopes and for dead letters.

WAR DEPARTMENT.

Hon. Jefferson Davis, Secretary of War. In the Secretary's office proper there are one chief clerk, seven subordinate clerks, two messengers, and four watchmen. The following bureaus are attached to this department:

Commanding General's Office.—This office, at the head of which is Lieutenant-General Scott, is at New York.

Adjutant General's Office.—Colonel Samuel Cooper, Adjutant General; Assistants—Lieut. Col. W. G. Freeman, Major George Deas, and Captain Seth Williams; Judge Advocate, Major John F. Lee; nine clerks, and one messenger. In this office are kept all the records which refer to the personnel of the army, the rolls, &c. It is here where all military commissions are made out.

Quartermaster General's Office.—Gen. Thomas S. Jesup, quartermaster general; Charles Thomas, assistant quartermaster general; Captain M. M. Clark, district quartermaster; Major H. C. Wayne in charge of clothing branch; eleven clerks and one messenger.

Paymaster General's Office.—Col. B. F. Larned, paymaster general; Major St. Clair Denny, district paymaster; eight clerks and one messenger.

Commissary General's Office.—Gen. George Gibson, commissary general; assistant, Captain A. E. Shiras; six clerks and one messenger.

Surgeon General's Office.—Gen. Thomas Lawson, surgeon general; assistants, Dr. R. C. Wood and Dr. Richard H. Coolidge; three clerks.

Engineer Office.—Gen. Joseph G. Totten, chief engineer; assistant, Lieutenant John D. Kurtz; five clerks and one messenger.

Topographical Bureau.—Colonel J. J. Abert, colonel of

the corps; assistant, Lieut. M. L. Smith; four clerks and messenger.

Ordnance Bureau.—Col. H. R. Craig, colonel of ordnance; assistant, Captain Wm. Maynadier; eight clerks and one messenger.

JOURNAL OF HOME AND FOREIGN COMMERCE.

PHYSICAL GEOGRAPHY OF THE SEA.*

BY LIEUT. M. F. MAURY, U. S. N.

WINDS AND CURRENTS—GULF STREAM—ATMOSPHERE, FOGS, ARCTIC OCEAN, SALT AND SHELLS OF THE SEA, MARINE ANIMALS, CALMS, DEPTH OF THE SEA, ETC.

This work is in a department of science where Lieutenant Maury is pre-eminent. We do not know any scientific man among our countrymen who has more signally shown how admirably intellect, observation, and industry, in those pursuits which the generality of men neither favor nor understand, may be brought to bear at once, and profitably, upon their material interests. In his observatory, among his instruments, and his drifted bottles picked up all over the seas, he has been silently designing and conferring inestimable services on the world. He has shown how navigation can be made safer and voyages shorter, and taught the hardy sons of the ocean where its much sought treasures are still to be found. Yet how few appreciate his great worth. Should he make his appearance in our wealthiest cities, and visit the counting-rooms of the most successful merchants, he would most probably receive no sign of recognition, and should he modestly ask for aid to publish any of his great charts he would be repulsed. This is the fate of too many of the great men of the world. Columbus was but the type of the race of unthanked sages who make all wise and all happy but themselves.

We undertake to say that most people do not know what the expression "Physical Geography of the Sea" actually means. If they remain in ignorance any longer it is no fault of Lieutenant Maury's. It seems that the present work grew out of the "Wind and Current Charts," and that its title was justified by their results. Its object is "to give a philosophical account of the winds and currents of the sea, of the

*New York Geographical and Commercial Gazette.

circulation of the atmosphere and ocean, of the temperature and depth of the sea, of the wonders hidden in its depths, and the phenomena which display themselves upon its surface, of its economy, its salts, its waters, its climates, and its inhabitants."

All this is ably done in eighteen chapters, each of intense interest. He thus describes the Gulf stream: "There is a river in the ocean. In the severest droughts it never fails, and in the mightiest floods it never overflows. Its banks and its bottom are of cold water, while its current is of warm. The Gulf of Mexico is its fountain, and its mouth is in the Arctic seas. It is the Gulf stream. There is in the world no other such majestic flow of waters. Its current is more rapid than the Mississippi or the Amazon."

The water, as far out from the Gulf as the coast of Carolina, is an indigo blue, distinctly marked by its sharp edge. Its cause is elaborately considered; but after comparing the opinions of the wisest men, we can do but little less than conjecture it. Various peculiarities, such as its galvanic properties, its temperature, its roof shape, its up-hill course, are satisfactorily treated. "It is the law of matter in motion," concludes Lieutenant Maury quaintly, "and not the shoals of Nantucket, which controls the Gulf stream."

The influence of the Gulf stream upon climate is an exceedingly interesting topic, which occupies the second chapter of the work. The circulation of its heated waters has a perceptible and beneficial effect upon the European coasts, mitigates the severity of the European winters, and even the severe cold of Spitzbergen.

The author imputes to the sagacity of fish the indication of the cold and warm currents of the ocean. The whale avoids the Gulf, but the tropical fishes delight in its warmth. It is said that the fishermen on the coast of Cornwall and Devonshire were much surprised, a few years since, to find their pilchard fisheries endangered by the strange presence of the bonito and albicore.

Lieutenant Maury is of the opinion that the cold water currents from the north which interpose their belts between our coast and the Gulf stream, or lie far below the surface, penetrate to the Gulf to supply the evaporating and boiling cauldron there, are the cause of our having such excellent fish in our Atlantic markets. The sheepshead on the warm coral banks of the Bahamas is without flavor; but here, and as far south as Virginia, it is delicious food. "The inhabitants of the ocean are as much the creatures of climate," says Lieutenant Maury, "as those of the land." "The sea,

then, has its offices," and the whale which seeks its food off the western islands, borne thither by the Gulf stream, is cared for, and as much as equally, as the migrating bird which seeks the return of spring, and the food of its preferred haunts.

Lieutenant Maury attributes to the stream the power of a "weather breeder," that of a producer of fogs and gales in the North Atlantic, and quotes the opinion entertained by the British admiralty, after a deliberate inquiry into their nature, that the causes lay in the irregularity and want of correspondence in the temperature of the stream and the neighboring regions of air and water. The storms in the Gulf stream are always the terror of seamen. Lieutenant Maury seems to consider them rotary in their form, and adopts the name given them by Mr. Piddington, cyclones, (not cycloins, as incorrectly printed in the work.)

The influence of the stream on commerce and navigation has not been unnoticed. Dr. Franklin has the credit of making its temperature, when thermometrically observed, a guide to the seamen on our coasts; and Lieutenant Maury thinks it is in consequence of modern navigators understanding its character, and applying the thermometer, not only to shorten voyages, but secure a wished-for port, that the great decline in southern commerce has taken place, making, for example, Charleston an outside station, rather than a halfway house for navigators, as it was before the Gulf stream was comprehended.

The chapter on the atmosphere is a very interesting one; but in this field of research we have so many good authorities, and the advantage of so much cotemporary observation, that the demonstrations (for such they are) of Lieutenant Maury are without the particular interest they otherwise would have. Some of his conclusions are, however, very striking. One is, "that the whole mass of the earth must have been taken into account, and weighed, in order that the proper degree of strength might be given to the fibres even of the snow drop." And that "if the earth, the air, and water had not been in exact counterpois, the whole arrangement of the animal and vegetable kingdoms would have varied from their present state." This strictly philosophical view of the earth's density, and its atmospheric machinery, singularly corresponds with what may have been deemed a poetic license in the sacred writer, when he speaks of the waters being measured in the Creator's hands, and of the mountains being weighed in scales, and the hills in a balance.

Red fogs and sea dust are next treated by the author.

They are still the wonder of seamen; but the microscope, in the hands of Ehrenberg, has detected them as consisting of infusoria taken up by the winds, and constantly swimming there. When the sea dust falls, it it attributed by some to the conflicting currents of air, and possibly to electric influences.

Lieutenant Maury attempts to show, and with great force, that the circulation of our atmosphere is much affected by magnetism, and that this guides the air across the calm belts of the tropics.

Of the currents of the sea, their government by settled laws, their indication of climate, their effect in equalizing the saline portions of seas, this work treats ably. We have also from the author very profound and satisfactory explanations of the currents of the Mediterranean, the Indian ocean, the Pacific, the Atlantic, the cold Asiatic, and the Peruvian current, so named after Humboldt. Of under-currents, so thoroughly tested by the experiments of the *Taney* and *Dolphin*, their design seems to be, in part, those of carrying off the large polar flow of waters into the Atlantic. The counter-currents of the Mediterranean Archipelago are, according to Admiral Beaufort, strong enough to prevent the steering of a ship.

The subject of the open sea in the Arctic ocean, treated in chapter 7th, though one of the briefest, is one of the most interesting in the whole work, not because it is intrinsically better, but because it has such close relations with the expeditions which have lately "vexed" the northern seas, and particularly with that adventurous voyage of our own countryman about to prove, no doubt, one of the most remarkable of them all.

It is not generally known that one of the earliest and most decided proofs of the existence of a northwest passage was that of finding harpoons, bearing the name and date of the whaleship's cruise, sticking in whales caught on the Pacific side, which were known to have been struck in Baffin's bay, and found so soon after their date, as to make it impossible for the fish to have accomplished the passage round either by Cape Horn or the Cape of Good Hope.

Lieutenant Maury says, that after examining the log-books of whaleships over periods of hundreds of thousands of days, it became evident that the tropical regions of the ocean were to the right whale as a sea of fire, and that the right whale of the northern is a different animal from that of the southern seas.

But there is other evidence of an open sea; that of icebergs

of vast extent carried swiftly to the north against a strong surface current, and also in the migration of birds and animals to the north at certain seasons. Lieutenant De Haven, when well up Wellington channel, saw a "water sky" to the north, and Captain Penny went there afterwards, and found an open sea on which he sailed.

The salts of the sea are next considered; and the question so often raised is discussed: Why is the sea salt? Because, says Lieutenant Maury, a system of oceanic circulation exists which could not be kept up if the waters were fresh, since the dynamical force of the difference of temperature would be too feeble. Now, as surface-water becomes warm, and by evaporation heavier and more densely salt, it sinks to the bottom, and becomes a means of leading heat to distant climates by distribution, circulation, and currents. Thus we arrive at the conclusions that fresh water and salt have different laws of expansion, and that salt is, in fact, the principal dynamical agent of the sea.

Of sea-shells and marine animals, Lieutenant Maury states the opinion that their secretions directly affect the specific gravity of sea-water, destroy its equilibrium, produce currents, and control their circulation. To their secretion of salt we owe it that the ocean does not become like the Dead Sea! We cannot say that we fully coincide in this hypothesis, brilliant and novel as it is.

We imagine that, in the construction of the oceans, a certain proportion of saline matter was imparted to their waters at their birth, of which they are not deprived by any natural agencies, and which the influx of fresh water from the land or the sky cannot destroy, while balanced by great and unlimited evaporation.

The next chapter treats of the calm regions, called sometimes the horse latitudes, and also of the doldrums. Here both men and cattle, while crossing in sailing vessels from Europe or America, are often delayed for weeks, suffer for want of water, and die of ill health.

The next chapter treats of the geographical agency of the winds, where their effect on clouds, their production of rain, their evaporating power, and power of precipitation, must also control the action of rivers, mountains, streams, lakes, seas, floods, all agents which affect changes in deposites, strata, and surfaces.

The chapter on the depths of the ocean continues the interest of the work. To the American navy the honor is due of the present plan of deep soundings. All the European navigators relied upon the shock to be felt when the lines

reached the bottom, and their slackness when afterwards paid out. This proved to be uncertain. Various plans were suggested, and one of them by Ericson was really excellent. He sent down a column of air with his lead, the compression of which was to be indicated on an accompanying scale; but the pressure was too great, the instrument could not withstand it.

The simplest of contrivances obviated the difficulties. A common twine thread and a cannon-ball sinker was found adequate to probe the greatest depths, the twine measuring 600 feet to the pound, and the shot weighing 32 pounds. The twine was reeled off, and its whole length known. The ball was lowered, and on reaching the bottom was disengaged from the twine. The quantity run off was, of course, indicated by that left on the reel marked off by the hundred fathoms.

Lieutenant Taney sent down a line, and found no bottom at 34,000 feet. Lieutenant Berryman found none at 39,000 feet. Lieutenant Parker, of the frigate Congress, saw a line 50,000 feet run out with the same result. Mr. Brooke, of the navy, has added a contrivance by which specimens of the bottom may be brought up from these great depths, thus materially improving the apparatus.

It is evident, then, that with such an arrangement the basin of the Atlantic may be explored, and profiles of its lower forms obtained. This has proved to be the fact, and we have been able to discover plateaus like those between Cape Race, Newfoundland, and Cape Clear, in Ireland, on which it is proposed to lay electric telegraph lines, as well as deep valleys and high mountains, corresponding with the outlines of the land.

In the 12th chapter, which is devoted to this discussion, many curious facts are stated, and many striking suggestions made, which at this time we are not prepared to discuss.

The 13th chapter, on the winds, embracing the "trades," "rain winds," "monsoons," the "calm-belts;" the 14th, on the climates of the ocean, with isothermal charts; the 15th, on the drift of the sea, all involve the gravest and most important theories, and will lead to wide discussion.

The two last chapters relate to storms and ocean route, of which ample charts and descriptions have been published at the National Observatory. These have been placed before the public by timely publications, and we shall not allude to them now. By consulting the celebrated Mr. Piddington's directions for the observation of storms and hurricanes, it will be found that his opinions have much influence

with Lieutenant Maury, though but little known in this country. On the whole, this treatise, which we have but imperfectly reviewed, may be considered as occupying the first rank in its appropriate department, and Lieutenant Maury has erected for himself a statue that is imperishable. Valable maps and charts are appended to the treatise.

BANK CAPITAL OF CITIES IN THE UNITED STATES.

The following table is compiled from Homan's *Bankers' Almanac* for 1855. It contains the banking capital of every city or town in the United States having one million or more of such capital:

Cities and towns.	Banks.	Capital.	Cities and towns.	Banks.	Capital.
New York, N Y.....	52	$48,482,900	Rochester, N. Y.....	6	$1,630,000
Boston, Mass.....	37	32,460,000	Syracuse, N. Y.....	10	1,647,500
Philadelphia, Pa.....	15	10,618,600	Troy, N. Y.....	11	2,991,470
Baltimore, Md.....	13	8,471,796	Utica, N. Y.....	6	1,735,200
New Orleans, La.....	8	14,702,600	Newark, N. J.....	4	1,708,650
Bangor, Me.....	13	1,350,000	Pittsburg, Pa.....	5	2,743,200
Portland, Me.....	6	1,775,000	Lynchburg, Va.....	4	1,169,300
Fall River, Mass.....	3	1,150,000	Petersburg, Va.....	3	1,170,000
Lowell, Mass.....	6	1,450,000	Richmond, Va.....	3	2,114,000
New Bedford, Mass...	4	2,100,000	Wheeling, Va.....	4	1,293,500
Salem, Mass.....	7	1,710,000	Wilmington, N. C....	3	1,050,000
Springfield, Mass.....	6	1,350,000	Charleston, S. C.....	9	10,756,735
Worcester, Mass.....	6	1,600,000	Columbia, S. C.....	3	1,300,000
Providence, R. I.....	37	12,896,460	Augusta, Ga.....	7	3,175,000
Bridgeport, Conn	5	1,049,500	Savannah, Ga.....	5	3,041,190
Hartford, Conn.....	10	5,826,900	Mobile, Ala.....	2	2,000,000
New Haven, Conn....	6	2,845,075	Chicago, Ill.....	6	1,264,000
Norwich, Conn.....	6	1,314,109	Covington, Ky.....	2	1,000,000
Albany, N. Y.....	9	2,921,100	Lexington, Ky.....	2	1,380,000
Brooklyn, N. Y.....	6	1,750,000	Louisville, Ky.....	4	3,260,000
Buffalo, N. Y.....	11	2,241,800	Nashville, Tenn.....	4	5,341,500

In New Hampshire, Vermont, Delaware, Ohio, Missouri, Michigan, Wisconsin, Indiana, Mississippi, Texas, Arkansas, Florida, and Iowa, there is no one town or city having bank capital to the extent of one million of dollars. This remark seems singular when applied to such places as Cincinnati, St. Louis, Detroit, Galveston, &c., where there is a very large export trade, but the legislatures of the States in which these places are located, have adopted stringent laws upon banking, and discouraged the introduction of capital to be employed in banking. St. Louis, with a population of 100,000, and a larger export trade than that of Philadelphia or Baltimore, is allowed only one bank, and that with a capital limited to $600,000.

Arkansas, Iowa, and Florida have no chartered banks, and the legality of the only two in Texas and Mississippi has

been questioned. Providence has the largest bank capital, for its size, of any city in the Union. New Orleans is the next. Charleston, Hartford, and Nashville are also largely favored, as appears by the above summary.

THE SHIPPING OF THE WORLD.

The London News, of a late date, publishes a long article headed the "Shipping of the World," some of the details of which are interesting. It is curious, first, to notice to how large an extent Great Britain and the United States have monopolized the carrying trade, and secondly, how nearly our own country has approached Great Britain in the commercial supremacy of the seas, and how certain is the fact that in a short time she will have outstripped her. The total floating tonnage of the whole civilized world, excluding only China and the East, consists of about 136,000 vessels of 14,500,000 tons. Of this total tonnage, 9,768,172 belongs to Great Britain and the United States, so that, excluding these two great maritime nations, the total commercial tonnage of the remainder of the civilized world is but 4,500,000, or less than that which either Great Britain or the United States individually possess. Even France, which comes next in the scale, is insignificant in comparison, its total tonnage being 716,000 tons against 5,043,270 for Great Britain and 4,724,902 for the United States. Italy and Sardinia stand next to France, then Holland, Prussia, Spain, Norway, Sweden, &c.

The comparative entrances and clearances of Great Britain and the United States in 1854 were as follows:

	Tonnage.
Great Britain and colonies	42,573,362
United States	40,000,000

Thus, though the mercantile marine of Great Britain seems the largest in the world, the writer from whom we quote admits that it will be surpassed by that of the United States, which has already augmented one-third since 1850. The accurate tonnage of the entrances and clearances of American vessels cannot be given as authoritatively as is the case with regard to British vessels, because the returns are not kept with the same official exactness. Hence, the above total set down on the American side is to some degree hypothetical, but there is reason to believe it is not overstated, but rather that the additional dispatch with which American vessels are freighted, and the accelerated speed with which they perform their voyages, has not been fully allowed for in the estimate. The tonnage of the ships, however, is stated on official data,

and it shows the American aggregate to be but one-sixteenth less than the British. This fact, when taken in connexion with the infancy of our marine, and its present rapid increase, shows how short will be the time required to overbalance the advantage which Great Britain now possesses, and to place the United States first in the rank of commercial nations.

The British colonies in the Pacific have several vessels, and the Eastern possessions, Siam, China, and the islands in the Indian ocean, have large fleets for trade or piracy, which must not be omitted in an estimate of the shipping of the world. The floating tonnage of the civilized world is estimated to consist of 136,000 vessels, with an aggregate tonnage of 14,500,000 tons. The number of seamen in all these vessels is supposed to be about 800,000, and including the Eastern States, China, &c., of the marine population of which we have not any accounts, there must be at least a million of persons engaged at sea and generally on the ocean. This rapidly increasing floating population is one of the curiosities of modern civilization. The Daily News pertinently remarks in regard to them:

"Latterly this population has not been considered a part, and has separately borne no share except as subsidiary to political power in the changes of society. But the time is coming when its numbers and its rapid extension in the United States—the shipping has been quadrupled, while the population has been only doubled—must force it on the attention of historians and philosophers. Of late art has added much to its power. Steam has given it feet fleeter than wings. The attention of scientific men is now being drawn to it, and chiefly by the labors of Lieut. Maury, of the United States, a large army of observers of natural phenomena, scattered over every part of the ocean, have been suddenly called into existence. Every ship captain has been taught how to profit by his opportunities and to become a registrar of facts. As it has become numerous and influential, the profession has become ennobled, and resuming its old place in civilization, the maritime population is destined again to take a lead, and as they at first helped to scatter, they now cement the various nations of the world into one society. A comparatively short time has elapsed since Holland, now possessing less than a fiftieth part of the seamen and tonnage of the world, was the greatest naval power in existence, and a match nearly for all other maritime nations. Holland has not declined since then, but other maritime nations have risen, and the impulse she strengthened is continued and increasing throughout the world. Trade, as an essential part of society, and shipping

to carry it on, are comparatively in their infancy. That every part of the ocean may yet be as crowded as the British channel is not improbable. America is fast filling with people growing in intelligence. Every part of her coast is likely, at no distant day, to be as well provided with vessels as the shores of the Hudson. That the waters of the ocean are to become peopled like the land, cannot be supposed; but within a period, judging from the rapidity of the progress in the last hundred years, likely to be extremely short in relation to the historical period of the world's existence, they may be all as crowded with vessels as the channel."

The writer of this article says accidental collisions between vessels at sea are very much on the increase, but he does not hnow that they are more so than the rapid increase of the number of vessels navigating the ocean might be supposed to occasion. The increase of the speed of the ships and the increase of their size are also elements which ought to be taken into the calculation. It is to be hoped that there is an increase of knowledge and carefulness on the part of the captains and crews; so that perhaps there is not, generally speaking, any very great increase of danger from collision. An admiralty return has just been published, which shows that the wrecks on the coasts and in the seas of the United Kingdom, during 1854, were 987, being 153 more than those in 1853, while the loss of life increased from 889 to 1,549. This return shows collisions at sea to be greatly on the increase.

MANUFACTURES, MINING, AND INTERNAL IMPROVEMENTS.

AGENCIES TO BE DEPENDED UPON IN CONSTRUCTING INTERNAL IMPROVEMENTS.

No. I.—Statesmanship—What is it?

"My object (says the writer of this paper, in a note to the editor of the Review, written from Galveston, Texas) is to bring up a subject of much public importance to the better and more serious consideration of the south, that is, the agency that should be mainly depended on in the construction of internal improvements.

"The citizens of the south, and more especially of New Orleans, have felt the effect of the agency I allude to. They have also, in a great measure, deceived themselves, in supposing that incorporated companies at the north were the subjects of competition against which they had to contend for the commerce of the west.

"With the motive of bringing out this subject, I would propose to publish a series of articles in your Review, and would invite such criticism as you may deem proper. I think you will accord with me in saying that the *strongest instru-*

mentality, under a sound system, can be made as much more competent for beneficence as it is for progress.

"I send you enclosed a portion of an article, which is a part of a series I would wish to publish, if agreeable."

"By its fruits shall ye know it." This declaration is as true when applied to the principles of political economy as when employed to test the moral and religious conduct of men. "There is a true and a false," "a right and a wrong," always incident to the effort of investigation; but there is no touchstone but that of result to determine the accuracy or justice of human undertakings.

Some talk of necessary evils as though an evil agency could be profitably employed in the work of beneficence. Some talk of individual scheming; call it by the gentler name of "private enterprise," and, as their highest view in the appreciation of statesmanship, believe that sound policy has no better foundation to rest on than that of individual speculation. This sentiment has grown to be enormous, but whether under the active and incessant teachings of mammon, or the delineation of principles emanating from the higher degree of political intellectuality, remains to be settled. Could a people always bear in mind the sentiment, that "eternal vigilance is the price of liberty," and add to it that unceasing care is the price of protection, and unabated effort of the masses in concert the only adequate basis for the rapid progress of the masses, political error would soon be driven from the State.

Every one will agree in the abstract that "to tax the many for the benefit of the few" is morally and politically wrong; that to tax the few for the benefit of the many is equally so. All just minded men acquiesce in the proposition, that to lay burdens equally on all classes in proportion to benefit received is the true rule, and that there is no other rule in political economy or statesmanship that is worth a moment's consideration. Just minded men differ only as to the means, the agency, and measures to be brought into requisition in order to produce this result. Here lies the desideratum that employs true statesmanship; that under democratic government combines the fractional elements of power into one great power, and exercises it so as to bring order out of disorder, and the strength of system out of confusion. Where this cannot be done, we may set it down as a mark that society, from defect of political education, is not prepared for true statesmanship, or that there are no statesmen within the State. When we deliberately come to this conclusion in Texas, and despair of both popular capacity and official patriotism, we shall be ready, perhaps, to deliver into the keep-

ing of an artificially created but irresponsible agency the progress and destinies of the State.

Had statesmanship not been wanting in the English Parliament, Thackeray's Book of "Snobs," which presented the ridiculous side of a false political economy, would never have been written. Had not popular ignorance been made to subserve the purposes of mercenary speculation in high places, the English journals and periodicals would not have so teemed with the exhibition of railway frauds, nor Newgate appeared so worthy of patronage from "crime in broadcloth." Had New York never departed from her original policy, we never should have seen it announced in the Railroad Journal that a single corporation had mismanaged to the amount of thirteen millions; nor should we have read in the same print of another company issuing ten millions of "paid up stock," without a dollar additional subscription; and under circumstances so questionable as to bestow on it the appellation of "high priest of swindlers." Had not this false political economy been suffered to buy itself into existence, and thus override for a time the doctrines of Clinton, Schuyler would not have "*Schuylerized*" his own projects, nor the credulous thousands have paid the penalty always incurred by false confidence; neither would Wall street have congregated the villainous plottings of the whole land; been made the seat of moral pestilence, where imposition is concocted, and cheating on a high scale turned into a trade by political thieves. Could the incidents of fraudulent imposition connected with the corporate railway system of the United States, during the last ten years, be presented in a condensed form to the public mind, no difficulty would arise in determining its comparative degree of demerits. That, however, is impossible. It is only in the places where it has festered to a head that criminality discloses itself, whilst the secret plottings for intended crime are seldom divulged so as to fasten on the originators. Their great game of deception, unlike the drama, is heralded by no degrees of disclosure, but merely found in the *denouement*.

Were the evils of the corporate system of internal improvements confined to the practice of those arts connected with raising and depressing the value of stocks and securities, directors robbing and swindling stockholders, and the innumerable frauds practiced on innocent but credulous third third persons, they might be borne with something like grumbling complacency, at least by those who had not been defrauded. Aside, also, from the power of its parts in combination to take venal possession of legislatures, there are

still deeper causes of injustice that lie at the inception, and underlie the whole foundation of the corporate system.

I have heretofore, on many occasions, illustrated by comparison the better economy in finance, arising from the employment of State credit. I have repeatedly urged the great necessity of an economical adjustment of our railways, and which is attainable only by making our system a unit. I have endeavored by reference and argument to show the importance of concentrating our own commerce within the borders of the States. I have often alluded to the injustice of virtually throwing the whole burden of sustaining our improvement system from year to year on the agricultural interests. I have endeavored to illustrate the inequitable policy of local, as compared with general taxation, for internal improvement purposes. The unjust effect of the corporate system has also been portrayed, in a delineation of the disabilities to the people of the back country, were corporators allowed to take possession of the revenue paying sections of improvement near the coast. These consideratins are truly important; but there is another of such glaring magnitude that it never ought to be lost sight of, and would be sufficient, in my mind, forever to exclude the corporate system from the State.

Had we population and wealth sufficient to commence railways under corporate system, by whom would they have to be built? What has uniformly happened in other States would undoubtedly transpire in this. Human nature must be altered, or the liberal, public-spirited portion of our citizens would be obliged to construct our roads. Tennessee will yet afford an apt illustration of what has occurred in other States as it respects the injustice of sacrificing her best citizens for the benefit of the public. Look at the adjustment of her railways, running as it were from centre to circumference, and carrying the commerce of the State in four principal directions, towards Charleston, Mobile, Memphis, and Louisville. The State transfers its commerce everywhere, but concentrates nowhere. It is immaterial whether this arises from topographical inability to do otherwise, the probable result will be that the State will have no revenue paying roads; there is still a greater certainty that her roads will not average in value fifty cents on the dollar of their cost. The average value of railway stocks in the United States is now below sixty cents on the dollar. Assuming that the roads in Tennessee will be worth the average value, and, making due allowance for the debt they may represent as contradistinguished from stock, the motives to investment

do not appear encouraging. The State of Tennessee lends ten thousand dollars to the mile, taking a lien on the road for repayment. If the State preserves and enforces its lien, it is not difficult to conjecture as to the balance left the public spirited citizen on his investment. I admit that Tennessee needs these roads. Her citizens have suffered long and much for the want of them. They will enrich the State many times beyond their cost. The fault I find is, the cruel injustice of the system that sacrifices the best citizens of the State for the public good, when a little correct statesmanship would place the burden where it legitimately belongs—UPON THE WHOLE PEOPLE.

To come back to Texas. What a vast work is to be done in order to accommodate its present and future wants in public improvements. Let the liberal and public spirited citizen now ponder well the question. If we adopt the State system, you are placed on an equality of advantage with all your fellow citizens. If we adopt the corporate system, or other system bearing any near analogy to it, you and the class to which you belong are subjected to an all but unending sacrifice for the benefit of the State at large. The consideration that brings us to the desperate resort of adopting the corporate system arises from the unfounded belief that our citizens are incompetent to put into successful requisition the higher principles of statesmanship. Public spirited citizens of Texas, it is you I am now addressing. Remember always that it is easier to assert and maintain twenty truths, connected with sound political economy, than to keep up the delusion over a single falsehood. If you proceed with the corporate system, and make progress, you will be obliged to become dishonest. You will be under the necessity of adopting false estimates and deceptive calculations as to cost, patronage, and revenue, or you cannot persuade your fellow citizens to take stock. The labor required to do this will be very great, for it is a game not as easily played as formerly. If you will bestow one fiftieth part of the labor required for this in persuading your fellow-citizens to be reasonable, and one thousandth part of the sacrifices to be incurred in disseminating sound information, the State system may soon be adopted, and every reasonable degree of progress made under it.

I make the assertion, that under the corporate system not the first foot of revenue paying road can be constructed in Texas for many years to come. The future will disclose a gloomy fulfilment of the prophecy as often as the experiment is tried. We may imagine a system laid down under an economical adjustment, and proper economy in finance, em-

bracing some fifteem hundred miles, where particular sections would yield enormous revenues, and the whole, as a unit, be a fair investment; but this pre-supposes the whole constructed and in operation. For corporators to proceed from the coast, however, with no roads constructed above as feeders, would be a very different thing. The lower sections would pass into other hands at a sacrifice of their owners, long before anything was constructed above, and the feeder, when constructed, before being fed, would share the same fate. It would be in this way the country would go on for a long series of years, feebly proceeding step by step on lying estimates and false calculations. To say there is statesmanship in such a process, and that true political economy requires the continuous sacrifice of the best citizens, is an assertion I would not attempt to maintain before a man of sense or an honest man. I am not disposed, however, to censure the efforts of our citizens who think this course their only resort. They do not see these results as I have witnessed them in other States, nor do they appreciate the strength and advantage of the State system, as I have seem them demonstrated in the comparison. I am prepared to make due allowance for the galling restraints upon our prosperity, and wonder not that they should excite even desperate resolves to remove them. I must, however, express my repugnance to any proposed course of our citizens that would unavoidably infract the sound principles of a just political economy. I am as ready to repudiate the cant expression of "*private enterprise*" as any other term, when substituted in the proper place, of "*suicidal undertaking;*" nor would I be more willing to encourage even the motive to gain, when I knew it would be disappointed over unprofitable engagements. I am therefore bound to say, that whoever indulges in the delirious dream of profit on corporate investment for railways in Texas will awake to the reality of "*private sacrifice.*"

We often hear expressions made use of by patriotic men, that have in reality no practical meaning. Under the apprehension that we could not make the proposed State system a sound one, they talk about "bankrupting the State." If we consider that our people, their social advantages and their property compose the State, then indeed is the State sufficiently bankrupted already. There is now resting, "like an incubus," upon our whole people, every element of common and individual sacrifice. Distresses and complaints, and just ones too, arise from every quarter; and all the newspaper puffs, as to public prosperity, are inadequate to disguise the deep seated and discouraging disabilities under which our

people are laboring. It would be a better expression, and more in keeping with our present condition, to say, "the State is already bankrupted." It is to escape this condition—to create wealth, and to establish the basis of common and permanent prosperity, and thus make the State and its people solvent—that we are talking about and devising plans for internal improvements. The advocates of the State system are trying to get beyond the narrow idea of locality, and to make the sentiment felt that we have a State instead of a mere locality to be cared for. They are trying to influence our people to come together in concert of action, and, under a healthy and prudently devised system, "to make a strong pull, and a pull altogether." Others have heretofore been calling on the "false gods to help us;" the sacrifices demanded have been offered, but the gods relied on seem to have "gone on a journey." It is now proposed that we should follow up this heathenism in political economy, by throwing our public spirited citizens under the wheels of the corporate Juggernaut. This is insisted on as the further sacrifice and condition precedent to the relief of the State. The advocates of the State system neither believe in this doctrine, nor do they believe that were the sacrifice incurred it would effect the purposes intended. They can see no correct or sound principle of statesmanship in it. The often repeated expressions, such as "grinding taxation," "bankrupting the State," &c., have no alarming sound to the intelligent political economist. They were invented by ignorant but pretending demagogues. The stereotype on which the largest edition was ever printed was worn out in Clinton's time, and thrown by in a dusty corner. Corporators hunted it out and imported it into Texas, on the supposition that it would still strike a degenerate copy, sufficient to alarm the timid fears of a border State people. Happily, these gloomy forebodings are in most instances being appreciated as they should be—an admonition to forethought and carefulness, but not as a discouragement to progress. It is now getting to be thought that the "Ship of State" can be built, and ballasted, and trimmed, and manned by our own citizens; the future will disclose whether we have as much of the live oak material in Texas as exists elsewhere.

I have said on another occasion, that the State system had no hired advocates. I might here repeat the declaration, with the additional remark, that no citizen must expect to make any speculation out of it, except his share in the common benefit. It must be carried forward by patriotism, good sense, and rationality, or it will never be carried at all. It

addresses itself to the judgment and consciences of men, and will be made dependent on the popular intelligence for its success. Many things must be taken into the account together in order to reason upon it correctly; but, as fast as the subject is mastered, will its advocates see the way clear. The question has already far progressed, and our citizens are much in advance of the press. The docrines of the dead, but living Clinton, have raised up many intelligent teachers in Texas, so much so, that should those who commenced the advocacy of the State system three years ago now attempt to put it back, it is believed they would not succeed. The present is an auspicious time—the world is filled with argument in its favor.

[To be continued.]

NEW ORLEANS, JACKSON, AND GREAT NORTHERN RAILROAD.

The last report of Colonel Campbell, the President of the road, will be read with interest, says the New Orleans Bulletin. It is a lucid, sensible, business-like document; sufficiently elaborate and circumstantial in detail to embrace the facts of the subject, without being prosy and tedious. For the sake of convenience, the president, in his report, considers the road in separate geographical divisions; giving the condition and progress of each division. The report is also very full and explicit in reference to the financial department, and the general prospects of the road. There is no one subject of more vital interest to the people of New Orleans than this same road, which is to bring us in direct communication with the Ohio valley and all the intervening region of country, for the rich trade and commerce of which this city is the natural depot. Although the report will be read, as it should be, by every one, we will give a summary of such salient features in it as are more strikingly important.

The first division, embracing eighty-eight miles, from the city of Osyka, a fraction of a mile beyond the Mississippi State line, was completed in August last, since which time daily passenger and freight trains have been running. The public will be gratified to learn that contrary to what was anticipated, the travel and traffic on this section of the road have more than equalled the expenses. Another interesting fact has been established in the construction of this work. We were in the habit of hearing a great deal of the "trembling prairies," which are marshy bogs, composed of layers of vegetable matter and earth, occasionally separated by strata of river clay. Experienced men, and even engineers,

confidently predicted that it was impracticable to build a railroad over these prairies. The falsity of these predictions and fears have been demonstrated. The route over the four and three-quarter miles of prairie, terminating at Bayou Labranche, is as substantial as any part of the Jackson railroad. Beyond the thirtieth mile the road traverses the two passes of Manchac, which are crossed by two substantial bridges, one 1,800 feet in length, and the other 700 feet, each provided with drawbridges. These bridges are perfectly firm, without the slightest variation in their original adjustment.

On this division there is sixteen miles of swamp, over which the road is supported upon cypress crib work about four feet high. This distance is in process of being filled up with earth. In the course of two years the whole distance between the city and Bayou Labranche will be filled up and ballasted, and the first forty-six miles of road, which was so often pronounced impracticable, will not be surpassed for efficiency and all practical purposes by any road in the country.

Of the first Mississippi division, from Osyka to Jackson, ninety-five miles, seventeen miles are now ready for the rails, and the grading of seven more will soon be completed. On this division there are fifteen more miles under contract.

The second Mississippi division, from Jackson to Canton, twenty-three and a quarter miles, is in progress of construction, and the road will be opened for transportation towards the close of the year.

The third Mississippi division extends from Canton to the Tennessee, two hundred and four miles. For certain reasons of a local character, the progress of this part of the road has been retarded by the defalcation of some of the Mississippi subscribers. The suspension of the work, however, is deemed to be only temporary. From the completion or progress of this road, and that of the Mobile and Ohio road, and the lateral roads from the Mississippi to Louisville and Nashville and to the Atlantic seaboard, which the two former roads intercept, the president sees in the distance, and not a remote distance, a direct communication between the northern lakes and the Gulf, by which New Orleans will be made the entrepot of a region of country not surpassed in fertility and agricultural wealth by any country in the world.

Financial Department.—The finances of the company (although at this period of money pressure they cannot realize on their credits as expeditiously as would be desired) are in a very healthy condition. Our space will not allow us to give the details. For particulars we refer to the report, which is remarkably comprehensive and intelligible, a fact not com-

mon to all reports. By judicious and enlightened legislation, by which negotiable credits or bonds were substituted for the annual subscriptions from the city and State, the company have been put in possession in advance of a large amount of means, which, if the terms had permitted, might at once have been made available. In consequence of the failure to make a loan on the "construction bonds," as they were called—which were predicated on the taxes—a debt of current expenses has accumulated to the amount of $1,000,000, which was converted into bills payable at convenient periods. To meet these bills it became indispensable to negotiate bonds, and it was deemed advisable that the president should proceed to the north, or to Europe, if necessary, to accomplish the object. How ably and successfully he succeeded in his mission the public has been before advised. He succeeded in negotiating a loan in Europe of fifty thousand pounds sterling, and in selling bonds to the amount of over two hundred thousand dollars, on more favorable terms than were anticipated. He also contracted for a sufficient quantity of iron to lay the road between Jackson and Canton, 23¼ miles. This part of the president's report is exceedingly interesting, and we solicit for it porticular attention.

The feature of this report that will be most apt to attract the attention of the public and provoke its unqualified approbation is, the singular prudence and judgment of management by which the expenditures of the company and its operations have been made to accommodate themselves to their means and circumstances. We notice no extravagant schemes for pushing on the work without the requisite provision of funds, no ill-advised contracts with irresponsible individuals, no wasteful accumulations of stock and materials, no loss of interest upon suspended debts. There seems, from the report before us, to have been throughout the management a provident adaption of means to ends. We deem one fact stated by the president of most gratifying intelligence, and which should be regarded as a triumph of financial skill, that notwithstanding the unprecedented pressure of monetary affairs, and the distrust of railroad securities, the New Orleans and Jackson Railroad Company have never had a note or bill protested. We again say to our readers, and they are all most deeply interested in the subject, read the whole report through.

CHARGES ON RAILWAY TRAFFIC.

The Boston Post of the 20th contains a somewhat elaborate article upon the question, "Ought the charges on railway

traffic be increased?" The reports of several railway companies to the legislature of Massachusetts, the Post says, justify the following conclusions:

1. That the expenses of railways have increased, since 1842, nearly thirty-seven per cent.

2. That the merchandise traffic has increased in a greater ratio than the passenger.

3. That the rates charged for merchandise traffic have hitherto been scarcely remunerative.

A statement is given showing the number of miles run, and the total receipts, expenses, and nett income per mile, from 1842 to 1854, inclusive, by which it is shown that whilst the receipts have remained nearly stationary, the expenses have largely increased, and the nett income has diminished twenty-five per cent.

The expenses of handling freight absorb about ninety-one per cent. of the receipts therefrom. It is stated that one superintendent carried one thousand four hundred barrels of flour ten miles for 1,600 cents. Other prominent facts are given, and the conclusion drawn is that the railroad policy must be changed; that a reciprocal duty is incumbent upon both parties, the company and the public. The writer sums up his argument thus:

"Railroad proprietors should not be too exacting on the one hand, neither should the public expect too much on the other. Passengers and merchandise should be transported at as low rates as are consistent with safety, economy and remuneration for capital invested; and the public should be willing to concede such compensation as is fair in comparison with other business. A railway company is merely a stage-driver and a teamster upon a large scale. 'Live and let live' is a good maxim in all business; and railway transportation should form no exception to so good a general rule."

ALABAMA COAL.

The steamer Isabella, having been purchased by the Alabama Coal Mining Company, is now fitting up for a towboat, and will be the first of a line of steamers and barges which the company intend to establish as a sure conveyance of their coal to the different markets. The coal from these mines is said to be of an excellent quality and in great abundance. We are indebted to the Alabama and Tennessee River Railroad Company, whose road runs through these coal regions, for this new trade; also to the enterprise of the proprietors composing the Alabama Coal Mining Company. We hope that

this company will be able to regulate the coal trade, so as to avoid, in a measure, the fluctuations to which it has always been subjected here as well as in Mobile. These mines are situated in the counties north of this place, through which the Alabama and Tennessee railroad passes. These counties abound in coal mines, which are inexhaustible, as, also, in minerals of different kinds, which, when fully developed, must make this one of the richest of the southern States.

GEOLOGY OF THE STATE OF MISSISSIPPI.

It has already been published in several papers of our State that I have discovered, on my geological tour through the southeastern counties of the State of Mississippi, a very important and really inexhaustible deposit of shell-marl. This deposit is in the southern part of Clark county. I found it first on the plantation of Gen. W. B. Trotter, in a deep gully, with high and perpendicular bluffs, on section 3, township 10, range 7 west, about 20 feet under the surface, cropping out in the gully. This really valuable deposit of marl is evidently a member of the tertiary (eocene) lime formation, which is so well developed in the southeastern part of our State. This formation is similar to the cretaceous formation of the secondary period, of which it is most evidently a continuation. It consists—

1. Of a hard carbonate of lime, or white limestone, in many localities eminently fit for burning quick lime;
2. Of a soft aluminous carbonate of lime, an inferior kind of marl, and
3. Of a fine green sand, full of tertiary shells, and of a superior quality, generally better than our green sands of the upper and lower cretaceous formation of the secondary period, and eminently fit for a marl of prairie and heavy clay soils.

The deposit of fine marl above mentioned takes the place of the green sand of the tertiary lime formation; it consists, to a large extent, of the detritus of shells and their former inmates, the decayed mollusks. This bed of sand is not confined to Gen. Trotter's plantation. I found it also outcropping along the bluff of the Chickasawhay river. This bluff is in that locality (section 3, township 10, range 7 west) very nearly 100 feet high; the deposit of marl appears for miles along the river, and forms its bed for more than one mile; it is in some places at least 50 feet thick. This deposit appears to dip from east to west; its strike is decidedly from north to south. At the first view of this deposit of marl, I recognized ts s uperior quality, and its great importance for a purely

agricultural State, as ours is. I declared it instantly the best marl I ever had seen, but a rapid analysis to which I have, since my return to our university, submitted the specimens of marl collected partly on Gen. Trotter's plantation, partly on the bluff of the Chickasawhay river, has by far exceeded my expectation.

According to this analysis, the marl contains in 100 parts—

Iron and soluble alumina	8.000
Carbonate of lime	32.954
Phosphate of lime	3.352
Sulphate of lime	3.648
Chloride of magnesium	900
Potash and ammonia	6.840
Insoluble silica and alumina	41.530
Hygroscopic water and loss	1.740
	100.000

According to the above analysis, 100 pounds of the marl contain 58.460 parts of soluble matter. This soluble matter consists of 8 pounds of oxide of iron and alumina; nearly 33 pounds of carbonate of lime; 3.352 pounds of phosphate of lime; 3.684 pounds of sulphate of lime; 9-10 of a pound of chloride of magnesium; 7.840, or very nearly 8 pounds of alkalies, mostly potash and a small quantity of ammonia. It is, therefore, very evident that this marl must be a most excellent manure, especially for light soils, of which the northern, middle and southern parts of our State abound. It contributes to the value and importance of the deposit of the marl, that it is not only situated in a region where it is eminently applicable, but that it is immediately on a navigable river, and within a mile or two only from the Mobile and Ohio railroad; it can, therefore, easily be transported to many counties of this State and of Alabama.

Of what importance good marl is for an agricultural State is shown by the example of the States of North Carolina, Virginia, and New Jersey; a large part of the land of those States is actually renewed by the effect of marl, and I doubt whether either of those States can produce such a superior marl as that of the deposit of Clarke county, which is, indeed, not much inferior to guano, and for some soils of our State even better.

The great importance of this deposit of marl for our State has induced me to hasten the publication of its discovery and quality, and I now invite the agricultural public to avail themselves as soon as possible of this fine manure, and to inform the undersigned of its effect.

The tertiary lime formation in Clarke and Wayne counties does not only afford this fine marl, but, as I have already re-

marked, the upper part of it, the hard carbonate of lime or limestone, yields in some places a most excellent material for burning quick-lime. Such a locality I found in Wayne county, on Round Hill, near Limestone creek, immediately on the Mobile and Ohio railroad, and on the plantation of Dr. E. A. Miller. There are three different kinds of limestone to be found, viz: a very hard white limestone, hard enough for building; a soft limestone of a yellowish color, and rather brittle; and lastly, a shell limestone, nearly entirely formed of tertiary shells, especially of the genus Pecten, and still more mixed with the oxide of iron, and, therefore, very yellow. I collected specimens of all those different kinds, and an analysis of them has given the following results:

No. 1. The hard limestone consists in 100 parts of—		
1. Insoluble silica and alumina	6.300	per cent.
2. Oxide of iron and soluble alumina	7.200	"
3. Carbonate of lime	86.500	"
No. 2. The soft limestone contains in 100 parts—		
1. Insoluble silica and alumina	15.050	"
2. Iron and soluble alumina	5.350	"
3. Carbonate of lime	79.500	"
No. 3. The shell limestone contains—		
1. Insoluble silica and alumina	9.200	"
2. Oxide of iron and soluble alumina	6.650	"
3. Carbonate of lime	84.150	"

Carbonate of lime contains, besides the lime, carbonic acid gas at the rate of 43.708 per cent. No. 1 contains, therefore, in 100 pounds only 48.693 pounds of pure quick-lime; No. 2 only 44.809 pounds; and No. 3 only 47.370 pounds. If well burned, 100 pounds of No. 1 will, nevertheless, weigh 62.193 pounds, but 13.500 pounds are impurities, and only 48.693 pounds are pure lime; 100 pounds of No. 2, well burned, will yield 65.304 pounds, but 44.809 pounds are only pure lime, and 20.495 pounds are impurities mixed with it; 100 pounds of No. 3, well burned, will yield 63.220 pounds, but 47.370 pounds are only pure lime, and 15.850 pounds are impurities. It is, therefore, evident No. 1, the hard limestone, is the best for making quick-lime; it not only yields most, but gives also the purest lime. If we have such fine material for manufacturing quick-lime in our own State, why do we not use it? Why do we purchase our lime from other States, especially from the north, if we can make it ourselves fully as good and much cheaper than we buy it?

L. HARPER.

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Geological and Agricultural department.

MINING STATISTICS OF CALIFORNIA.

Dr. Trask, the geologist of the State of California, in his recent report to the legislature, states that the area that is now known to contain valuable deposites of gold is believed to be at least six times greater than that which was developed during the years of 1848 and 1849, while the number of miners actually engaged in the extraction of gold is less than those of 1852; yet the export of the year last past exceeds by nine millions the total exports of the former year.

The capital invested in and the gross receipts of the quartz mines he states as follows:

Investments - - - - -	$1,127,000
Gross receipts - - - - -	2,157,000
Total capital and products for 1854 - -	$3,284,510

From the above it appears, says Dr. Trask, that the aggregate product of these mines is about four per cent. of the product of the State, as far as the latter is known with any degree of certainty.

The aggregate number of persons actively employed in extracting the ores and in reducing the same amounts to six hundred and ten, bearing a very small proportion to the great mass engaged in the other branch of mining in the State.

He gives also the number of water companies for mining purposes; the number of miles constructed in seven of the mining counties, and their value in each county, as follows:

Counties.	No. Companies.	No. Miles.	Valuation.
Amador	15	129	$298,000
Calaveras	12	165	397,000
Eldorado	10	173	380,000
Nevada	27	210	412,000
Placer	11	160	369,000
Sierra	14	137	180,000
Tuolumne	20	185	446,000
Total	109	1,159	2,470,000

GEOLOGICAL REMARKS RELATING TO THE WEST AND SOUTHWEST OF THE UNITED STATES.

BY WILLIAM P. ROBERTS.

Since my return from an examination of the coal and other mineral deposits on the Ohio river, and of the States of Missouri and Kansas, with the territories occupied by the Choctaw and Cherokee Indians, I have been frequently requested to make known to the public the impression derived from an exposing, laborious, and highly interesting and instructive geological tour, with the hope that the knowledge thus obtained will contribute to draw the attention of the public to

the wonderful and varied resources of the richest portion of this great republic—a section of our country not well known, where persons seeking investments of this kind will find the most reliable and tempting opportunities, and where the industrious farmer and mechanic and other operatives (whom it seems are likely, considering the present situation and future prospects of Europe, to emigrate to this free and happy Union in much larger numbers than hitherto they have done) will find the most desirable locations for their future homes. My examinations were made on horseback, in a section of our country where I had not before been, and, considering the time spent, were very thorough and extensive, as the specimens I collected will show.

In one State alone (Arkansas) I travelled near four thousand miles with the same animal, gathering minerals, such as ores of iron of very great variety, copper, galena, and argentiferous lead, zinc of the finest quality, coal of several kinds, with granite, marble, lime and sandstone, breccia, and other geological material, which may hereafter be profitably worked for useful and ornamental purposes, which have since been forwarded to me, the variety and richness of which will show to any one at all familiar with such subjects the importance the great west and southwest will become, at no distant day, in the history of this country. This opinion I am sustained in by the examinations of many gentlemen well known to science and the world, who have done me the honor to call and examine them. I am indebted to the obliging and courteous people residing there for many kind offices and facilities afforded me in sending my collection from interior points to places on the river or other highways, and I take much pleasure in acknowledging their kindness and my obligations. And here I may remark, that a frank, open, and enlarged hospitality is everywhere characteristic of the settlers of Arkansas. Wherever I called at a house, however humble, for accommodation for the night, the reply was, "Alight and come in;" and I always found myself treated *better* than themselves, and I felt as much security in travelling as I should in any of the middle or eastern States. I frequently and fully told them that my object was to inform myself of the resources, mineral and agricultural, of their State, and to use that knowledge in making it known to enterprising and well-qualified emigrants. This announcement was always received by them with pleasure. The people generally are quite as intelligent and shrewd as persons filling similar positions in any part of our country, and any one who should go among them, expecting to find it otherwise, will soon be disabused on this point.

AGRICULTURAL AND HORTICULTURAL JOURNAL.

INTRODUCTION OF NEW PLANTS.

The seeds of another useful plant which has recently been introduced by the Patent Office are those of the Spurry (Spirgula arvensis,) which, as a green manure, has been found most signally beneficial on poor, dry, sandy soils. It may either be sown in autumn, on the wheat stubble, or after early potatoes, and ploughed under in spring, preparatory to the annual crop; or it may be used to replace the naked fallow, which is often hurtful to lands of so light a character. In the latter case the first sowing may take place in March, the second in May, and the third in July, each crop being ploughed in to the depth of three or four inches, and the new seed then sown and harrowed. When the third crop is ploughed in the land is ready for a crop of winter grain. Green manuring, or the ploughing under of green crops in their living state, attracted the early attention of civilized men, and has been practised more or less from the time of Xenophon, who wrote about four hundred years before the commencement of our era. He recommended green plants to be ploughed into the soil, and even that crops should be cultivated for that purpose; for these, he says, "enrich the earth as much as dung." The lupin is named as an excellent manure by most of the early writers on agriculture, and is cultivated at the present day in Spain, Italy, Tuscany, and the south of France, for the purpose of being ploughed into the soil.

The ploughing under of green crops is directly opposed to burning peat, or turf, in regard to intention and effect, and is particularly serviceable where the basis of vegetable mould is to be increased. The soil manured by them receives all the vegetable food contained in the seed sown, the quantity of which in peas and buckwheat is not very inconsiderable. Some plants employed for this purpose, as peas, turnips, clover, &c., push down their roots into the soil far below the reach of the ordinary plough, and whatever nutriment they find there they suck up and bring to the surface in the form of green manure, and administer it to the growth other plants, as wheat, barley, oats, and rye; the principle being to enrich the soil by setting a quick growing plant to draw organic matter from the air, and inorganic from the sub-soil, and then ploughing it in. When the green crops are turned into the soil, besides enriching its staple with fertilizing matter, they promote the fermentation and decomposition of woody fibre buried near the surface, which is a useless incumbrance in an undecayed state, so far as any immediate effect is concerned. In general, they should be ploughed under, if possible, when in flower, or at the time when the flower is opening; for, in this age of growth, they contain the largest quantity of soluble matter.

For poor, light, and sandy soils, these manures do well; and also for poor clays, which, however, are much improved by having the subsoil burnt, or rather charred, with peat, spent tan-bark, saw-dust, apple pomace, or any other cheap fuel. And as green vegetable matters ferment, or sour, when undergoing decomposition, the land should be limed just before or soon after ploughing under the plants.

The vegetables grown for this purpose should possess the following properties in order to be cultivated with economy, and attain the desired end: 1st. They should flourish on poor soils; 2d, should require but little labor of cultivation; 3d, have cheap seed; 4th, be of quick and sure growth; 5th, stand all weathers and vermin; 6th, run their roots deep; 7th, bring up such inorganic matter from the subsoil as the succeeding crops require; 8th, should smother weeds; and 9th, should produce a large quantity of herbage that will readily decay in the soil.

[*Union*.

CULTIVATION OF THE SUGAR CANE IN THE EAST.

The following interesting paper was recently addressed to the officer in charge of the agricultural branch of the Patent Office, by the Hon. J. Balistier, who, it will be recollected, has spent many years in the East as United States consul at Singapore, and as a diplomatic agent of this government in other far-distant quarters of the globe :

WASHINGTON, *May* 17, 1855.

SIR : My attention was arrested sometime ago by a newspaper paragraph stating that one of our national ships had been sent to the island of Penang, in the Straits of Malacca, at the instance of some southern sugar planters, to procure a supply of sugar canes to be used as seed for their use. Subsequently, the same public channel gave notice of the arrival of the ship with the desirable supply of cane ; and, finally, more recently, while in conversation with you, I learned that the effort to introduce that species of cane had failed, in consequence of their decay in the homeward passage.

On this subject I beg leave to make some remarks, which may not be inappropriately laid before you in your official situation, which I the more readily do, as it may deter further attempt at bringing into our unsuitable climate the Salangor cane, which, from personal knowledge, I know to be almost exclusively planted on the sugar estates of Province Wellesley, the only sugar fields near Penang, for on the island itself there are no sugar plantations.

Province Wellesley, close opposite to Prince of Wales Island, commonly called Poolo-Penang, lays near the equator, in north latitude 5° 20′, and east longitude 100° 30′. The cane in question, where first it originated I know not, but it takes its name from the river and district of Salango, about 1° south and east of Penang, in the Straits of Malacca aforesaid. This cane, which is large and heavy, is unusually hard, and it requires the pressure of a powerful mill to extract its juice, which, be it allowed, is renowned for its sacharine properties. But the objection, which I judge to be fatal to it in any southern region of the United States, is that as under the equartor as at Singapore, and near to it as at Province Wellesley, it does not mature under sixteen to eighteen months, it could be of no use for the purpose of making sugar, or even syrup, in Texas or Louisiana, where the regular order of the seasons requires the cane to be ripe and fit for being cut in ten months at furthest from the time of planting, and before the setting in of the frost.

After many years of personal experience of cane cultivation in the western and eastern hemisphere, I am warranted in stating that of all the varieties that have fallen under my observation, I have met with none that require so long a time to come to maturity as the Salangor, and I am equally warranted in declaring that whoever recommended its introduction into this country for a useful purpose could not have taken into account the shortness of our hot season, at the end of which this description of canes would be found to contain juice but very slighly sweet, and, consequently, unfitted for the use of our sugar planters.

But though the Salangor cane is not adapted to the requirements of the country for the reason above given, the same objection may not hold against another species of sugar-cane obtainable in the same locality, viz : Province Wellesley, Malacca, and Singapore, the three principal ports in the straits of Malacca, where it is cultivated under the name of *'t'eboo-tillor*, or egg-cane, because of the swelling between the joints, which gives it, according to the fancy of the Malays, an egg-like appearance there, *tillor* signifying egg, and *'t'eboo* a cane. This species is less robust and hard than the other, and is furthermore unlike it, being yellow when ripe, smoth and glassy, whereas the Salangor is deep green, and fuzzy on the outside. The *tillor* has the great advantage over the other of ripening and being fit for cutting in from ten to twelve months from the time of planting, which is considerably less than the time required by the West India, Bourbon, or Java red canes, so much esteemed in the east. If not possessed of the great sacharine quality of the Salangor, the *tillor* is nevertheless a profitable cane, as the juice extracted from it, with a moderate pressure of the cylinders, range from nine to eleven degrees, of Beaume's sacharometer, on good ground seldom falling below ten degrees, and it has the additional advantage of making returns in five to seven months less time than the other.

Now, it is to this variety of cane that I would beg leave to direct the attention of those interested in introducing changes which natural degeneration in most

plants renders necessary from time to time, and which experience teaches is as necessary to the sugar-cane as to any other vegetable production. Through our consular or private agents at Singapore or Penang supplies might be obtained by transmitting directions to have cuttings laid horizontally on a bed of rich earth, deposited to a considerable thickness in the bottom of a case of convenient size, for transportation. The case should be allowed to remain open for some days, in order to be able to observe if the cuttings, which have been slightly covered over with earth, throw out shoots, and if ascertained to be doing well, then an inch or two of additional earth should be laid upon them, and the glazed sides of the case should be closed and hermetically sealed, to exclude the atmosphere. The case, so closed, may be conveyed in perfect safety on a secluded part of the deck of a merchant ship to the United States during the summer, care being taken not to open the case or to break the panes of glass, and thus admit the saline air of the sea to them.

While on this subject, allow me further to bring to your notice the Chinese mode of sugar-cane cultivation, which differs from ours in placing horizontally the cuttings in a shallow drill, the cuttings having been previously tied up in bundles, and put by in a shaded place at the time of cutting down the field. The bundles are allowed to remain in this manner until within about ten days of planting time, when they are placed upright in a shallow pit, untied, and fenced all around the pit with rich earth, and slightly covered over with cane leaves. In about one week they throw out shoots from the sides, which, when about an inch long, indicate that they are ready for setting out in the drills aforesaid, and are then slightly covered with earth.

By this process a whole month is gained over the ordinary mode of sticking the cuttings into the ground, which usually renders about a third or a half of it unproductive, on account of the pressure of the ground upon that part of it which is buried, whereas by the Chinese process every eye is fully developed, and becomes productive, and, as before said, a whole month is gained, a boon of no little importance in the limited seasons of our sugar-producing country.

I have the honor to be, sir, your most obedient servant,

J. Balistier.

AGRICULTURAL DIVISION OF THE PATENT OFFICE.

Insects Injurious and Beneficial to Vegetation.—One of the most important movements that has been made in this branch of the office is that of employing a gentleman to investigate the habits of insects injurious and beneficial to crops. The vast amount of benefit that must arise from such an inquiry is hardly perhaps appreciated by the great majority of persons; and yet it cannot fail to be the means of spreading most useful information among cultivators, and of adding to the productiveness of the soil and the wealth of the country by originating precautions and suggesting ideas for the more effectual protection of the productions of the fields and gardens from attacks of insects. The information we at present possess about them is so limited, and the methods suggested for destroying them so varied and ill-digested, that any step towards a more exact study of their habits cannot be too highly estimated. The gentleman chosen by Judge Mason, Commissioner of Patents, for this investigation is Mr. Townsend Glover, already sufficiently well known as an artist and naturalist of promising talents. He has been directing his attention to the subject with a devotion and enthusiasm which spring from a conviction of the importance of the task imposed upon him and a confidence of success. While studying the habits of insects he illustrates them, with a view of more accurately describing them; giving at the same time such remedies for their destruction or diminution as may be ascertained to be most effectual.

Mr. Glover is now turning his attention more especially to the insects pernicious and beneficial to rice, tobacco, the sugar cane, cotton, and the orange plant, and for that purpose left this city some days ago for Florida, in which State he expects to have such opportunities and facilities as his investigations demand. He has been also directed to discover, if possible, the cause of the *white-rot* in the live oak, and to ascertain the most probable remedy. During the past year he was engaged in watching the operations of the rice and cotton insects in the Carolinas, Georgia, and Alabama, as also those of the corn and grain insects of the middle and northern States, while he continued to direct his attention, at

every fitting occasion, to those insects which attack vines and fruit trees. To point out to the farmer the insects beneficial to him is in some measure to insure their protection from wanton destruction, and have their natural co-operation in aiding to secure from injury the fruits of human industry.

In the next annual report, now printing, will be found engravings prepared on stone by Mr. Glover of many of these insects. They will be carefully studied by all persons interested in agriculture; and, as the subject is one of no common interest, benefiting as it must do every portion of the Union, the efforts of Mr. Glover will be duly estimated by every agriculturist and obtain for him their hearty co-operation.

IMPORTANT TO COTTON PLANTERS.

An enterprising gentleman named G. R. Griffith has been perfecting an invention by which cotton may be got to market and the seaboard, in spite of low water in the southern rivers; and he left here this afternoon for the south to demonstrate the practicability of his invention to the planters. The plan is very simple, being merely the adoption of a kind of vulcanized India-rubber bag, so constructed that any number of them may be connected together in the fashion of a raft, and either towed down the shallow streams by a steamer of light draught or piloted by hands on the cotton, two men being able to manage one hundred bales. Twelve inches of water is amply sufficient for the transportation of cotton by means of these patent floaters; and if they can be successfully introduced, the condition of the streams hereafter will be no barrier to supplying the markets with the great southern staple. Mr. Griffith gave a practical exhibition of his invention at this port a few days since, and, I believe, entirely satisfied those present of the feasibility of the plan.

CAROB TREE, OR ST. JOHN'S BREAD.

Among the recent importation of seeds from Alicanti, Spain, says the Washington *Union*, were those of the Carob tree, the pods of which, when ripe, contain a few drops of a substance resembling honey. From this circumstance, it is supposed that this tree is identical with the one upon which St. John fed while in the wilderness, and hence sometimes is called St. John's bread. It blooms twice a year—at the end of January or the first of February, and about the middle of September—and, when well watered, grows to a considerable height and size, sometimes spreading to such a degree as to have a circumference of from two hundred to three hundred feet, and bearing upwards of a ton of pods. Young trees, only a year old, often have stems eight or ten inches thick, with branches ten or twelve feet long. Cattle, horses, and mules devour the pods with great avidity, and, if well fed upon them, will become extremely fat, or in good condition to work. This tree, doubtless, will succeed well in the southern, and, perhaps, in the middle States. Thus it is that the interest government takes in the success of the science of agriculture not only tends to improve the science at home, but collects the seeds of all climes to swell its own product.

SLAVE AND FREE NEGRO LAW OF THE DISTRICT OF COLUMBIA.

We insert, as of general interest to all of our readers, the negro laws of the District of Columbia. They are extracted from the very able and valuable pamphlet, prepared by M. Thompson, of the Washington bar, entitled "Abstract of the Laws of the District of Columbia."

SLAVES.—The act of Maryland of 1796, chap. 67, and act of Maryland of 1797, chapter 15, concerning the importation of slaves, are in force in the District of Columbia, although in terms they are applicable only to the State of Maryland; by which any slave brought into said district, for sale, or to reside therein, shall thereupon immediately be free: *Provided*, That any citizen of the United States, coming into said district with a *bona fide* intention of settling therein, may import, at the time of such removal, or within one year thereafter, and retain as a slave, any slave his property at the time of removal, if such slave, or his or her mother, have been resident of one of the United States three years next preced-

ing such removal; aud such citizens dying within the said year, their executors or administrators may bring in such slaves within one year after the said death, and also the issue of such slaves born after the removal of the person dying; and this same privilege of importing is extended to the guardians of infants, entitled on such persons dying within one year after the removal, and to male infants so entitled after attaining the age of twenty-one, and to female infants after attaining the age of sixteen, and to include the issue, as in the case of executors; such persons so removing not to sell or dispose of any slaves so imported, or their increase, unless they have resided in said district three years next preceding such sale, excepting dispositions by will, by law for debts, or in consequence of intestacy.

There is no law affecting the right of persons travelling or sojourning in said district with any slave, such slave not being sold or otherwise disposed of in the district; but carried, or attempted to be carried, by the owner out of the district. Vide sec. 4, act of Maryland, 1796, chap. 67.

By act of Congress of 3d May, 1802, chap. 52, it is provided that Maryland slaves may be brought into the District of Columbia, and held or disposed of in the same way as practised therein prior to the cession of said district to the United States.

A slave brought from any place, except Maryland, into the District of Columbia, more than a year after his master, and sold, or to be sold, or to reside, is entitled to freedom. 1 Cranch, C. C. R. 276, 370. 2 Cranch, C. C. R. 373.

A slave imported into the District of Columbia for sale, and sold within three years after such importation, is entitled to freedom. 2 Cranch, C. C. R. 261, 373. 4 Cranch, C. C. R. 1.

A slave is not entitled to freedom from being hired to a resident of the District of Columbia for a limited time. 2 Cranch, 405. A slave does not acquire a right to freedom by being sent out of the District of Columbia for sale, and, not being sold, brought back, after eight or nine months' absence. 2 Cranch, C. C. R. 102. A slave carried from the District of Columbia by its owner, for a temporary residence only, and brought back and sold to a resident of said district, does not thereby become entitled to freedom. 2 Cranch, C. C. R. 418.

SLAVES OF NON-RESIDENTS.—The following tax is imposed upon slaves of non-residents hired to persons residing within the city of Washington, D. C., to wit: On every male slave above the age of eighteen years, and under forty-five, twenty dollars per annum; on every male slave under eighteen and above twelve years of age, twelve dollars per annum; and on every female slave between fifteen and forty-five years of age, two dollars per annum; and any non-resident who shall hire a slave to labor, or do service in said city, without having first paid the above tax, shall forfeit and pay the sum of twenty dollars for every such offence; and any person who shall hire any slave belonging to a non-resident, for whom the said tax is not paid, shall, in like manner, forfeit and pay the sum of twenty dollars for every slave so hired; and if such person shall continue to employ such slave, so hired, he or she shall forfeit and pay the sum of five dollars for every month he or she shall continue to employ such slave.

Every person bringing or sending any slave into said city to hire or reside therein, shall, within twenty days thereafter, cause the said slave to be recorded on the books of the corporation, and shall deposit with the register an affidavit that such slave is *bona fide* his or her property; and every person neglecting or refusing so to do, shall forfeit and pay the sum of twenty dollars. Corp. Laws, 255, 256.

SLAVE TRADE AND SLAVE DEPOTS.—Any slave whatever brought into the District of Columbia by its owner, or by the authority or consent of its owner, for the purpose of being sold, or for the purpose of being placed in depot, to be subsequently transferred to any other State or place to be sold as merchandise, shall thereupon become liberated and free.

The corporations of the cities of Washington and Georgetown have power, from time to time, and as often as may be necessary, to abate, break up, and abolish any depot or place of confinement of slaves brought into the said district for the purpose of being sold or transferred to any other State or place as merchandise. Act of Congress, September 20, 1850. Stat. at Large, vol. 9, 467.

FREE NEGROES AND MULATTOES.—Every negro or mulatto slave, who shall be manumitted or declared free in any manner or form whatsoever, in Washington city, D. C., and every free negro or mulatto who shall come within said city,

shall, within five days thereafter, exhibit to the mayor satisfactory evidence of his or her title to freedom, and enter into bond with one good and sufficient white freehold security, in the penalty of fifty dollars, conditioned for his or her good and orderly conduct, and a like bond and surety for each and every member of his or her family, to be executed in the same manner, conditioned for the good and orderly conduct of the person named therein, that he or she does not become chargeable to, or commit any offence against, said corporation, or against the laws of the United States; which bonds shall be renewed every year, on the tenth day of December, and on failure so to do he, she, or they, shall forfeit and pay a sum not exceeding twenty dollars; and he, she, or they, and also the persons for whom such failure shall occur, being minors, shall be ordered by the mayor to depart forthwith from the city, and on failure to do so shall be committed to the workhouse and be employed, at the discretion of the mayor, until such conditions shall be complied with; not exceeding six months in any one commitment.

And every negro or mulatto who shall be committed or declared free in any manner or form whatsoever, in said city, and every free negro or mulatto who shall come into said city, shall, within five days thereafter, and on the tenth day of December thereafter, annually record his or her name, and the name or names of every member of his or her family, on the books of said corporation, and at the same time pay into the treasury of said corporation for himself, herself, and each and every member of his or her family so registered, the sum of fifty dollars; and he, she, or they, failing so to do, shall forfeit and pay to said corporation a sum not less than ten, nor exceeding twenty dollars, and shall be ordered by the mayor to depart forthwith from said city; and failing to depart therefrom shall be committed to the workhouse, &c., &c., as above stated.

But there is no law to apply to, or affect the condition of, any free negro or mulatto who may come into said city in the service of any transient person or member of Congress, while in such employment, or who may have been sent to the city by his or her employer on temporary business. Corp. Laws, 252, 253.

EARLY STATE AND PROGRESS OF AGRICULTURE IN THE SOUTHWEST.

Several years elapsed, after the establishment of the French colony at Baluxi, before even the common vegetables of the garden were cultivated, and the sterile soil of the seashore was not calculated to invite a more extended culture, if the character and habits of the colonists, chiefly soldiers, deriving all their supplies from the mother country, had inclined them to such pursuits.

It was, therefore, not until the province came under the control of the Company of the Indies that the tillage of the earth became to any extent a fixed pursuit. The first impulse was then given to planting by the large grants to European capitalists, who sent out laborers to open and improve their lands.

The most efficient of these were German redemptioners; but the nature of the climate and the heavy labor of removing the dense forests rendered the progress of improvement tedious and discouraging.

It was soon found necessary to resort to Africa for suitable operatives for the prosecution of agricultural enterprise; these were introduced by the company, from time to time, to a limited extent, and disposed of to the colonists at established and moderate rates, payable in annual instalments in the products of the soil.

These products were naturally confined, for a considerable period, to articles of necessity for home consumption, and notwithstanding some large grants were made near Natchez and on the Yazoo, ostensibly for the cultivation of tobacco and indigo, and although some "large plantations, with extensive improvements," were established near the former place, it does not appear that anything beyond the spoils of the chase, or the peltries procured by traffic with the Indian tribes, was exported from the country.

By the massacre of the inhabitants by the Natchez, in 1729 and 1730, these establishments were broken up, and from this period the French were too much engaged in exterminating the Natchez, and in hostile incursions among the Chickasaws, to re-occupy and cultivate, advantageously, their regained possessions.

It was, therefore, under the occupancy of the country by the English that we trace the first germ of successful and systematic agriculture in Mississippi.

The emigration which ensued, on the change of rulers, being chiefly from the Carolinas, Virginia, Jersey, and New England, was from a class differing essentially in habits from their more volatile and restless predecessors, the French, who were more addicted to the chase and to trafficking with their Indian neighbors, than to more laborous and settled pursuits.

Many of these settlers were accustomed to agriculture, and being generally accompanied by their families, resorted at once to the tillage of the earth as a means of support.

Their cultivation was necessarily rude, and their implements few and imperfect; yet their products were varied and for the purpose of subsistence ample. Almost every article of prime necessity, which the soil could yield, was produced by them to the extent of their wants.* Cattle and swine required little other attention than protection from the bear and wolf of the forest, and were raised abundantly; whilst the small farms, frequently confined to a few acres, exhibited a variety of productions that is now rarely found together in the country. Indian corn, wheat, oats, rye, rice and potatoes, cotton, flax, tobacco, and indigo, were almost universally cultivated, but rarely, if at all, for exportation.

In the early stages of the settlement of the colony, many of the common conveniences of life were necessarily dispensed with, or supplied with such substitutes as ingenuity or skill could devise and fabricate from the productions of the country.

Not many years since, were to be seen the moulds in which the head of one of the most respectable aad wealthy families of the present day was wont to cast the pewter platters and spoons which constituted the only *plate* of himself and neighbors. The inventories of the confiscated effects of some prominent, and, as then regarded, opulent persons, yet preserved among the Spanish archives, exhibit a simplicity of attire and furniture in strong contrast with that which would now satisfy those of very contracted means or humble station.

The scarcity and high price of iron, and the consequent imperfection of agricultural implements, was perhaps most felt and least easily remedied. At that period cut-nails were not invented, and the wrought-nail cost a dollar a pound. Tools and all iron implements bore a corresponding price, owing, in some degree, to the high freights on heavy articles up the Mississippi; the voyage from New Orleans to Natchez, made by keelboats and barges, requiring several weeks.

A set of plough-irons was, therefore, an acquisition of no little value. Iron entered into the composition of few of the wagons or carts, and the wheels were often made of a transverse section or disk sawed and properly fashioned from the trunk of a tree of suitable diameter.

These trucks constituted, to a considerable extent, the only means of transportation of heavy articles. Even as late as after the introduction of Whitney's saw-gin, a now opulent planter, a venerable and highly respected citizen, a native of Adams county, states that, in a wagon of this kind, he hauled his crop of cotton for two years to a neighboring gin; a frame-work of cane serving in lieu of plank in the construction of the body.

Not many years before, the same gentleman was reduced to the necessity of fabricating his only plough by framing a common mattock into a beam, that being the only implement suited to the purpose left on his plantation by the depredating Indians.

This was only about sixty-five years since, and occurred within ten miles of Natchez, and to an individual belonging to one of the most opulent and influential families in the country at that day.

Flax was raised chiefly for shoe-thread and similar uses, but in some families linen cloth was made.

Leather was commonly tanned throughout the country in large troughs dug out of the trunks of trees.

From the earliest occupancy by the English, cotton in small quantities, sufficient for domestic purposes, was habitually cultivated; it was of the black or naked seed variety, was planted in hills, and cultivated with the hoe. Fifty or sixty pounds was the ordinary quantity gathered in a day. The seeds were

* In 1775, Mr. Dunbar enumerates among the productions of his plantation rice, tobacco, flaxseed, indigo seed, corn, buckwheat, barley, peas, besides many other things.

picked out by the hand, or separated from the lint by means of the small roller gin. It was spun and woven at home, and constituted the chief apparel of the inhabitants; the small quantity of indigo then grown, and the numerous dye-stuffs that the forests afforded, supplied all the coloring materials required for dyeing cloth.*

Rice formed an important article of diet, supplying largely the deficiency of flour; the colonists, especially the French, accommodating themselves slowly and reluctantly to bread made from the Indian corn. It was prepared by pounding in common wooden mortars, and perhaps was not as fair as that which we now purchase, but of far richer flavor and more nutritious.

In the absence of mill-stones, when they could not be obtained, the Indian corn was reduced to meal by pounding in the same way.

Large herds of cattle were owned by the more opulent inhabitants, for which the garrison at Natchez afforded the chief market, and some were driven to New Orleans shortly previous to the change of government. The price of common stock cattle was about the same then as at this time.—*Wailes' Geological, etc., Report on the State of Mississippi. Lippencott, Grambo & Co. Philadelphia*, 1855.

AGRICULTURAL MEMOIR.

"*Resolved*, That the secretary of this society be, and he is hereby, requested to prepare a memoir on the subject of the Santee Long cotton—its quality and its capacity of improvement for finer fabrics—the nature and quality of our soils—the adaptation of different manures and composts, and especially the applicability of *calcareous manures to our pine-land;* and the capacity of our common soils for other agricultural products than cotton.—*Black Oak Agricultural Society*

In compliance with the above resolution, the secretary of the Black Oak Agricultural Society submits to your honorable body the following remarks on the different subjects referred to in that resolution.

The position which the State Agricultural Society holds as the representative of the great agricultural interest, makes it also the organ of communication between the different sections of our State. The auxiliary societies may thus be brought to act more in concert, and by free intercourse and interchange of opinion on the diversified soil and products of our country, on the custom and practice of each section, and the state of agriculture generally, be the useful means of developing our resources, and promoting the great object for which they were formed.

We, therefore, lay before you our practice and the condition of our agriculture; and, through you, we invite the other societies to co-operate with us and contribute towards so useful an object.

We begin with the "*Nature and quality of our soils.*" The region of the Santee Long cotton commences at the head of tide-water on Cooper river, extends across the country to the Santee river, and above, as high as Vance's ferry. Within these limits are embraced the head-waters of Cooper river, which extend to within a few miles of the Santee, intersecting the country in different directions, and forming along their courses large swamps, formerly cultivated in rice, but abandoned after the introduction of cotton, for the more profitable cultivation of the highland.

In the neighborhood of these streams are some of the best cotton lands. In their virgin state they contain a growth of oak, dogwood, &c., generally intermixed with the short-leaf pine, indicating the proximity of lime-stone to the surface. They are well adapted to the cultivation of the black-seed cotton, and comprise the principal portion of the Santee cotton-lands. Bordering the different swamps which intersect the country, they extend to various distances; in some places composing the entire highland between contiguous streams; in other places, extending to the ridges which separate the head-waters of the more remote streams.

Another class of lands which have been found well adapted to the culture of black-seed cotton is that of "mixed growth," containing the pine, with an undergrowth of gum, oak, &c. These lands have a large portion of clay near the surface, and are highly improved by the application of compost manures. There is a gradual and progressive change observable in the forest growth of these lands.

* The first indigo made by Mr. Dunbar was by steeping it in barrels.

Whenever the pine has had possession for any length of time, and fires are excluded, a young growth of oak, hickory, gum, or of some other plant which indicates good land, invariably springs up; and at the time the pines are disappearing from old age, this second growth is ready to take possession of the soil. Thus a tract of country which would now be classed as pine land might, in the course of 30 or 40 years, become of "mixed growth;" and in a half century after, when the pines had entirely given way to the undergrowth, would be designated as oak and hickory. So, also, when an oak forest is declining from old age, a young growth of the same tree can never flourish; but when cleared and thrown out of cultivation a growth of pine invariably follows. These changes are all consistent with Liebig, and other agricultural chemists, that, as different plants require different alkaline bases for their full development, a soil which has for a long time been supporting a certain kind becomes exhausted of those ingredients necessary to that plant, and is thereby rendered unfit to maintain a young growth of the same; but another plant which requires less, or of a different kind; may find a sufficiency. In this condition the land is partly in a state of forest, and, from the gradual and continual disintegration of the soil, is preparing another supply of food for its former tenants.

The pine forests in this section of country are extensive. They generally form the ridge-lands which separate the head waters of the more remote streams, and vary in texture from light sandy soil to dark clay loam. Those of the former description will never repay the trouble of clearing and cultivation; the latter, when capable of being drained, have been found productive.

The inland swamps, formerly cleared and cultivated in rice, but now abandoned and used only as pasturage grounds, comprise a large body of the lands in this section of country. They are formed by the tributary streams of the Santee and Cooper rivers, and vary in extent as well as in the texture of their soils. The ridge land which separate the waters of the Santee and Cooper rivers approach within a few miles of the former. Of course, the streams which enter the Santee are few. The branches of Cooper river traverse a distance of 15 or 20 miles, the swamps becoming wider until they unite at the head of tide-water, to form the valuable rice-lands of Cooper river. Below the alluvial deposites of these swamps is generally found calcareous earth—either in the form of rock, limestone, or in a friable mass, intermixed with variable proportions of sand and clay. These beds of calcareous earth, in many situations, may be obtained with little labor; and when the proportion of lime they contain is in sufficient quantity to repay the cost of digging, may be used with decided benefit to supply an ingredient to our highland soils, in which they are all deficient.

On the "applicability of calcareous manures to our pine-land."—It has long been observed that the growth on the land invariably indicates the proximity of limestone to the surface. Thus, on the fertile lands bordering the swamps, where the growth is composed of the red-oak, dogwood, poplar, and short-leaf pine, limestone may always be found within 8 or 10 feet of the surface. On the contrary, wherever the long-leaf pine predominates it is never found at the ordinary depth of wells. At the Eutaw Springs the limestone is on the surface; and in the pine-land, three miles distant, wells have been excavated to the depth of 50 feet without reaching it. In this respect it only follows the order of other stratified rocks, croping out in some localities, and in others far buried in the bowels of the earth. The extent of the fossil limestone strata has not been precisely defined. It is believed, however, to be continuous from Virginia, southward and southwestward, as far as Alabama, including the whole country between the falls of the rivers and the sea.

From specimens which have been analyzed by Professor Shepard* the limestone of this section of country varies from 87 to 94 per cent. carbonate of lime.

The term marl is now generally applied to these fossil remains when they are in a finely comminuted state, and form, by the admixture of sand and clay, a friable mass.

The beneficial effects of calcareous earth, by which I mean the carbonate of lime, (mild lime,) when applied to land deficient in that ingredient, have been proven beyond the shadow of doubt. A series of experiments, conducted by Mr. Ruffin, of Virginia, for a period of upwards of twenty years with accuracy, and under a variety of circumstances, on different soils, and in various quantities, have placed

* See March No. Southern Cabinet, for 1840.

the highly useful qualities of this manure beyond dispute. The revolution it is now effecting on the almost exhausted lands of lower Virginia is the best evidence of its fertilizing qualities. If lime has failed on some soils of producing any good effect, it differs not in that respect from many other mineral manures which are acknowledged to be valuable. Gypsum and the nitrates, in certain localities, have produced wonderful effects upon vegetation, in others they have failed entirely. But, although the modus operandi of lime and its salts has not yet been thoroughly investigated, chemical science has unfolded enough to guide us to some useful results, and to warn us from some errors.

Lime is never found, in nature, in any uncombined state; its affinity for the acids being so strong, and carbonic acid the most generally diffused, it is usually found as a carbonate in the form of limestone, marble, or chalk. When this carbonate has been subjected to white heat for a length of time the carbonic acid is expelled, and the lime is found to have lost nearly 44 per cent. of its weight. It is then quick-lime. On exposure to a moist atmosphere it gradually falls into powder; or this may be caused immediately by the addition of water, when it becomes slaked lime. In this state it is a combination of lime, with about one-third of its weight of water, and is what the chemists term hydrate of lime. When hydrate of lime, or slaked lime, is exposed to the air it gradually absorbs carbonic acid until it has regained that which it lost from its burning, (nearly 44 per cent. of its weight,) and then becomes carbonate of lime again.

From some of the known qualities of lime and its carbonate, we may judge of its probable effects under certain circumstances. Thus, quick-lime cannot long remain exposed to the air, or in contact with the organic matter of the soil, without absorbing carbonic acid from one or the other. When applied, therefore, to a soil in which there is much inert, innutritious vegetable matter, it effects a partial decomposition of the vegetable matter, abstracting a sufficient quantity of oxygen and carbon to convert it into a carbonate, thereby causing new transformations and rendering those inert substances more soluble and nutritious as the food of plants. On the contrary, when applied to soils which already contain nutritious matter in the form of composts, or decaying vegetable substances, the same chemical influence is exerted; it becomes a carbonate at the expense of the carbonic acid of the compost manure; but, in doing this, it robs the soil of its most valuable ingredient.

On this account quick-lime should be cautiously used, and with a full knowledge of its effects. It should never be applied to lands in which the vegetable matter is in a state of decay and fit for the food of plants; but soils which are known to contain sufficient vegetable matter and are still unproductive—low grounds, which cause the rust and blight, but which show, evidently, in their color and texture, the presence of organic matter—would probably be improved by the cautious use of quick-lime.

When the carbonate of lime, or marl, (the valuable ingredient in marl being the carbonate of lime,) is applied to land, no such chemical effect as that which follows the application of quick-lime is produced; for the lime being already saturated with carbonic acid, requires nothing more from the organic matter of the soil. Now, does this carbonate of lime, or marl, possess any specific quality as a fertilizer, or does it exert its beneficial influence in a variety of ways?

Let us now consider its mode of action:

1st. All writers on agriculture, and all practical men who have used it, agree that lime acts mechanically upon the texture of the soil, rendering stiff clay-lands lighter and more porous, and sandy lands more compact and adhesive. Indeed, European writers class calcareous earth as one of the common ingredients of all their fertile lands; but in America it has been found in but few.

2d. When, in 1832, Mr. Ruffin published his essay on Calcareous Manures he attributed their fertilizing power to the property of combining with some noxious acid in the soil and neutralizing its effects; and from the invariable growth of sorrel (*Rumex acetosa*) upon such soils as he found highly susceptible of improvement by the application of calcareous earth, he inferred that this noxious acid was the oxalic. Now, oxalic acid is found in the juices of the sorrels, in the leaves and roots of rhubarb, and other plants, in the same way that the tartaric acid is found in the grape, and the critic and malic acids in the raspberry and strawberry, generally combined with lime or potash. After the death and decay of the plants these compounds are subject to the same process of decomposition

which attends other vegetable substances. We might as well expect to find any other product of the organic structure existing in a soil as oxalic acid.*

But chemists have discovered other acids in soils and of a more permanent character. Such are the humic and crenic acids. They are the product of the decay of vegetable matter and exist in most soils. With lime the crenic acid forms a soluble salt, (Dr. Jackson,) and the humate of lime is also sparingly soluble, (Liebig.) Dr. Jackson says that crenate of lime is generally found in the subsoil; and he adds: "On this depends the theory of subsoil ploughing." But these different substances, and their mode of action upon the soil, has not yet been thoroughly investigated by chemists. Until then, practical agriculture can derive no positive benefit from their discovery.

3d. Calcareous earth acts chemically upon the soil in forming new combinations. Sir H. Davy mentions, in his lectures on agricultural chemistry, that a soil which has always proved unproductive was submitted to him for examination. Upon analysis he found it to contain sulphate of iron, (copperas,) and recommended the application of lime. A new combination was thus effected; the noxious ingredient was rendered harmless, and another salt, sulphate of lime, (gypsum,) was formed, by which the soil was made fertile.

4th. According to Liebig, and other chemists, phosphoric acid exists in all soils capable of cultivation.—*Ag. Chem.*, p. 200. In combination with lime it forms an ingredient of the ashes of a number of plants and trees. Of the bones of graminivorous animals, phosphate of lime forms about 50 per cent.; of course, this is all derived from the soil, in the shape of vegetables, and the grasses which serve as their food. Lime, in some form or other, has been found in the ashes of most plants. Davy found sulphate of lime in the ashes of clover and the cultivated grasses. Dr. Dana states that the pollen of the *Pinus abies* contains 3 per cent. of the phosphates of lime and potash. On the same authority the phosphates of lime and magnesia are found in the ashes of cotton and tobacco.†

Whenever lime is found in the ashes in the form of a carbonate it must have been combined with the juices of the living plant. During combustion the vegetable acids are decomposed, and carbonic acid, which is always formed in the process, unites with the lime. The presence of lime in the ashes of nearly all plants shows the important part it plays in the economy of vegetable life.

The foregoing remarks would, then, lead us to the following conclusions, viz:

1st. Quick-lime, or lime after it is slaked, but before it becomes carbonated, should only be applied to soils which contain a large portion of vegetable matter, or where this vegetable matter is in an inert state, and is to be partially decomposed before it can become fit for the food of plants. It should not be used on lands which contain nutritious matter in a state ready to be taken up by plants; because, when in contact with lime, the manure is deprived of its most valuable part, viz: the carbonic acid.

2d. Carbonate of lime, marl, or calcareous earth, appears to possess many valuable properties as a manure. It improves the texture of the soil—making sandy lands more compact, and stiff clay lands more porous. Coming in contact with any noxious acids that may exist in the soil it unites with them and forms salts of lime, which either improves the land or are harmless. When applied to lands which contain phosphoric acid it forms phosphate of lime, a valuable manure.

These different salts of lime, and the agency they exert over the vegetable kingdom, may tend to explain, in some degree, the fertilizing effects of calcareous earth on certain soils, and for certain plants.

Judging, therefore, of the probable effects of lime and its carbonate from the foregoing facts, there could be but little doubt, theoretically speaking, of its being a fertilizer of all soils deficient in that ingredient. Mr. Ruffin and the planters of lower Virginia have answered the question practically; and, as evidence of the high estimation in which it is held, point us to their practice and the rich return it yields them. With respect to its applicability to our pine land, taking Mr. Ruffin's experience for our guide, there can be no doubt, as his experiments

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*On this subject Professor Johnston remarks: "It (oxalic acid) is not known to exist in the soil or in the waters which reach the roots of plants. Where it is found in living vegetables, therefore, it must, like the other substances they contain, have been formed or elaborated in the interior of the plant itself."

†Dr. Dana also states that the diseases ergot and smut show free phosphoric acid. Lime and its carbonate would both correct this defect and form a valuable ingredient to the soil—phosphate of lime. The same application would probably prevent the rust in cotton.

were chiefly confined to the pine land. But all our highlands, even the best, are deficient in calcareous earth and would all, probably, be improved by it.

On the adaptation of composts and manures.—In order to proceed understandingly in the application of manures, we should first ascertain what it is that plants require for their nourishment—in what form it should be presented to them—and, finally, in how much do the different manures that are applied to lands supply them with their proper food. And here we must make use of the lights which science has shed on our subject. The chemist, the vegetable physiologist, and the botanist, and the geologist, have all labored for us. They have amassed a store of information for agriculture—they are ready and anxious to offer their assistance. Shall we reject their proferred aid and be content to grope our way blindly, satisfied with the little amount of experience which each one can acquire in his own limited sphere? Agriculture can, then, never hold that rank among the sciences to which her importance entitles her. This cautious distrust of all innovations upon old customs is useful in a certain degree; but practical men have suffered their prejudices too long to stand in the way of their advancement. From the operation of this cause, agriculture has not reaped the full benefit of their discoveries. But scientific men are now turning their attention to the application of chemical truths to a practical system of husbandry; and, if differences of opinion still exist, it is no more than may be expected of a subject yet in its infancy and so complicated in all its details. But much is already known, and of that we may avail ourselves, in as far as it will assist us.

From the analysis of plants they are found to consist of a few elementary bodies—carbon, oxygen, hydrogen, and nitrogen, and a few earthy metallic bases, as potash, soda, lime, magnesia, &c., which are found, after the plant is burnt, in the form of ashes. Of these few simple bodies the entire vegetation of the globe is composed; and the difference of form, habits, and structure, and the infinitely various properties of plants, are merely the result of varying proportions of these few simple constituents, or the absence of one or more of them. The inquiry then arises, whence, and in what form, are these bodies taken into the plant?

1st. *Carbon.*—It is now the generally received opinion of chemists and scientific men that plants obtain their carbon partly from the carbonic acid, which is always a constituent of the atmosphere,* and partly from that in the soil arising from the decay of animal or vegetable matter, and that it is taken into the plant through the leaves and through the roots. The carbonic acid is decomposed by the leaves under the influence of light, the oxygen liberated, and the carbon retained.

2d. *Oxygen* and *hydrogen* are supposed to enter the plant in the form of water, which is then decomposed and these elements furnished to the plant. Oxygen is also supplied from the atmosphere, and from the carbonic acid which is taken up and decomposed by the leaves.

3d. *Nitrogen.*—On the authority of Liebig, Johnston, and other chemists, ammonia and other nitric acids are the principal sources of the supply of nitrogen to plants. They are supposed to be received up through the roots and to be decomposed in passing through the organic vegetable structure.

4th. The earthy bodies which compose the ashes are taken up only in solution by the roots. For their supply, therefore, plants are dependent entirely upon the soil upon which they grow.

Let us now examine the system of manuring usually pursued with respect to the economy of collecting the materials and their fertilizing effects.

Compost manures.—The compost manures are made up of litter of all kinds from the woods, long and short-leaf pine straw, oak leaves, &c. Of these the long-leaf pine straw is the least valuable, on account of its resinous matter, which is antiseptic and requires a longer time before it reaches the proper state of putrefaction. Now, whether we adopt the opinion of European chemists, that it is only in the form of carbonic acid that this vegetable matter furnishes food to plants, or whether it is in the form of soluble geine, as some American writers have contended, it can make but little difference, as far as the compost heap is concerned. They are both the product of the decay and decomposition of vegetable matter, and as soon as that state commences the compost heap is in the proper condition to furnish food to growing plants.

But, besides their vegetable matter, the leaves of plants contain a large portion

* The atmosphere contains about 1-2500 of its bulk of carbonic acid.

of soluble salts, (*Liebig's Org. Chem*, p. 161.) These salts are not disengaged, however, until decay has proceeded so far as to break down the vegetable structure completely, and raw composts are never allowed to remain unemployed so long, their agency is always secured.

The animal excrements contained in compost manures, whilst they assist and hasten the decomposition of the vegetable matter, contain in themselves highly fertilizing ingredients in the form of soluble salts and ammonia. When exposed for any length of time to the sun and rains most of these valuable ingredients are lost. The soluble salts are dissolved and carried down into the earth; the gaseous parts are dissipated in the air. The great desideratum, then, is to economize and secure them. For this purpose a close retentive soil should be selected, or, what would be preferable, a layer of clay or swamp-mud should be spread at the bottom of the litter-pens. This would prevent the escape of the soluble matter. A covering over the pen would protect it from the effects of sun and rain; but if this is impracticable, another layer of clay or swamp-mud should be spread over the surface as soon as, or just before, fermentation commences. This would arrest all gaseous substances and would itself become a valuable part of the compost heap.

When it is remembered that the most valuable ingredients of the compost heap are those most easily lost, viz: the soluble salts and the volatile ammonia, is it not the dictate of ordinary prudence to secure these matters and not, by neglect, suffer the labor of the whole year to be lost?

The manures made in our stables and cow-pens may be said to contain the following constituents which furnish food to plants, viz: carbonic acid, formed during the gradual decay of the vegetable matter; potash, and other alkalies contained in the leaves; ammonia, which is the result of the decomposition of the urine; phosphate of lime, magnesia, and soda, and carbonate of lime and potash, from the solid excrement.

The question, then, of the adaptation of these manures is dependent on our knowledge of their constituents, and a knowledge of the constituents of the particular plant to which we wish to apply them. The manure from the stable is always more fertilizing than that from the cow-pen, because the excrements of the horse is richer in salts than that of the cow. So, also, wheat, which contains a larger portion of gluten than any other grain, is more sensibly improved than any other by the addition of animal manure, because it furnishes the nitrogen, an essential ingredient of the gluten. It is evident that when we ascertain the constituents of different plants we then know what it is they require for their well being; and, if the soil is deficient in any of these ingredients, we must supply them by means of manures.

Cotton seed has always held a high rank among the meliorating manures, and to its fertilizing effects every planter who has used it will bear testimony. It is the practice, in this section of country, to apply it to small grain, or the provision crop, and always with decided benefit. To what peculiar property its good effects on a crop are to be attributed has not been determined with any certainty. Experiments have proved that an equal bulk of the living seed is more beneficial than one of dead seed; and it has hence been conjectured that its effects were owing to the oily matter contained in the living seed. But we know that even when allowed to germinate and grow to the height of three or four inches, and when all the oily matter must have been expended in giving nourishment to the young plant, it still has a beneficial effect on a crop. It will, therefore, require further and more accurate experiments to prove that its good effects are alone attributable to that cause.*

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*During the germination of all seeds there is a substance generated which chemists have called diastase. It possesses the property of dissolving starch, and, after a while, of converting it into gum, and then into sugar. Its purpose seems to be to prepare the inert, insoluble starch of the seed to be taken up by the young embryo, and of forming the compounds gum or sugar, as the necessities of the plant may require. It contains nitrogen, and when allowed to decompose among other products yields ammonia.—(Johnston.) If, then, cotton-seed be applied to a plant as manure, and it be crushed as soon as germination commences, the vital energy is destroyed, and the diastase formed during germination is ready to decompose and yield ammonia to the living plant. The other substances, also, in whatever stage they may be, undergo decomposition and furnish carbonic acid to the roots.

This theory of its action is merely thrown out to solicit inquiry and induce experiments. The matter may be tested by treating some plants with the living seed, crushed to a powder, in which all the oily matter would still remain, and others with the seed allowed to germinate and then destroyed.

Mineral manures—Gypsum, (sulphate of lime.)—This manure has not been used to any extent in this section of country. It has been applied to cotton by a few individuals, and, generally, with decided benefit; but the experiments were not conducted with sufficient care, nor were the results noted accurately enough to make them of value for reference. Where it is successfully used there is perhaps no manure that has produced such wonderful effects as gypsum.

It is said to show its influence more decidedly on clover and the cultivated grasses than on any other crop; and, when it is remembered that these plants contain in their ashes sulphate of lime, it is readily accounted for.

Liebig says: "The striking fertility and luxuriance of a meadow, upon which it is strewed, depends only upon its fixing in the soil the ammonia of the atmosphere, which would otherwise be volatilized with the water which evaporates."

The ammonia present in the atmosphere is always the carbonate; when, therefore, it comes in contact with sulphate of lime, a mutual decomposition ensues, and two other salts are formed—sulphate of ammonia, which is not volatile, and carbonate of lime. And to the presence of this sulphate of ammonia, according to Liebig, is the luxuriance of vegetation owing. Professor Johnston (*Lect. on Ag. Chem.*) does not admit that to this cause only is the effect of gypsum to be attributed. He contends that it plays an important part in furnishing the inorganic earthy food to plants, which is as necessary to their well being as carbon, or any other constituent. And his reasoning derives additional force from the fact that gypsum is specially adapted to such plants as are known to contain that salt in their ashes.

The quantity recommended to be applied is from 2 to 3 cwt. per acre.

Wood ashes.—Until of late years the subject of the inorganic part of plants, the ingredients of the ashes, had excited but little notice, and no application was made of a knowledge of their compounds to practical agriculture.

As late as 1813, when Sir Humphrey Davy published his Lectures on Agricultural Chemistry, he attached but little importance to these earthy constituents as the food of plants. He considered their agency as more mechanical in giving absorbent powers to the soil, or in improving the texture with regard to its capacity of retaining the heat of the sun. In the hands of Liebig, Johnston, and others, it has become a subject full of interest; and, on their authority, a knowledge of its application is of the utmost importance in forming a truly fertile soil.

From analysis it is found that different plants, and even different parts of the same plant, contain in like quantities of alkaline bases.*

On a proper application of this knowledge depends, in a great measure, the principle of the rotation of crops. Nature, when left to herself, shows the necessity of such a course in the gradual and progressive change of the forest growth from one kind of tree to another, and in the succession of grasses and weeds which spring up on fields thrown out of cultivation.

On this subject Professor Lindley remarks: "When it is said that a plant becomes tired of the soil, and we find that manuring fails to invigorate it, the destruction of alkalies in the soil, and the want of a sufficient supply of these bases in the manure, seem to offer a solution of the enigma."

We know that when the sweet potato has been planted for more than two or three years on the same land, and the vines cured and removed as fodder, the application of cow-pen manure alone cannot keep up the productiveness of the land, although laid on ever so liberally. If an analysis be made of the potato root and vine it will probably be found to contain some base necessary to its existence which is not supplied by that kind of manure.† The value of ashes must depend

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*Johnston gives the constituents of *grain of wheat* and *wheat-straw*, thus:

Potash	19	⅛
Soda	20⅛	⅛
Lime	8	7
Magnesia	8	1
Alumina	2	2¼
Silica	34	81
Sulphuric acid	4	1
Phosphoric acid	3⅛	5
Chlorine	1	1
	100	100

†The surprising results which are sometimes obtained from the use of a very small and apparently insignificant quantity of mineral manures show the very important part they perform in the economy of vegetation. The facts are strictly in accordance with the theory of their action. From Saussure's table of analysis we find Indian corn thus constituted

very much on the kind of wood from which it is procured, and on the plant to which it is intended to apply it. Thus, the ashes of the oak would be the best that could be applied to the living oak; for then it would have those earthy constituents it requires presented in the exact proportions, and in a fit state to insure a healthy and vigorous growth, without waiting to obtain them from the gradual and slow disintegration of the soil. The same is true of any other kind of plant; hence the necessity of listing in the old corn and cotton stalks, and thus restoring to the land a portion of the inorganic food which had been taken up to maintain the previous crop.

This subject is one full of interest to the planter, and may tend to explain many things which, to him, would be otherwise inexplicable.

Wood ashes has been long in use in European culture and in the northern States. It has been used in this section of country, the present summer, in cotton, at the rate of 10 to 20 bushels per acre, and with a promise of increased production to the crop.

The nitrates.—The nitrate of potash (saltpetre) and the nitrate of soda, besides furnishing to the plant the ingredients of its ashes, also contain a most valuable element, nitrogen, which they yield to the plant in the form of nitric acid. These, and some other salts that have been highly spoken of in European culture, are, however, at present, too costly to be used on an extensive scale, unless by actual experiment they are found to remunerate sufficiently to make their use profitable.

The Santee Long cotton.—As stated before, the Santee Long cotton is confined to the region of country embraced between the head of tide-water on Cooper river and the Santee, and extending above along the Santee as high as Vance's ferry. The long staple or black-seed cotton, cultivated within these limits, has long been known in the market as the Santee cotton. Within the past 8 or 10 years, from the introduction of the finer seeds of the Sea Islands, the Santee cotton has lost that distinctive character it formerly possessed. Like the Sea Island cotton, it has become more of a fancy article; dependent very much upon favorite brands and particular qualities of seed. From the great facility with which the different species impregnate each other an almost endless variety has been produced; differing either in the shape or color of the leaf, the color of the flower, the shape of the pod, the texture and color of the wood, or the appearance of the seed. Like the rose and dahlia, the varieties have been so much multiplied that it would be as easy to define the quality of the one as to fix the distinctive color of the others. Until the past year the average price of Santee cotton has generally been about three times that of Uplands. During the past season they fell under that proportion.

The cotton of the Sea Islands, for fineness of texture and length of staple, have *always held* the first rank in the market. This difference has been generally attributed to the influence of the saline atmosphere in which they grew. From their proximity to the ocean there is every reason to believe that it does exert

Constituents of 100 *parts of ashes.*

	Ashes from 1,000 parts of the dry plant.	Soluble salts.	Earthy phosphates.	Earthy carbonates.	Silica.	Metalic oxide.	Loss.
Indian corn in tassel.	81	69	5	0.25	7.5	0.25	17

From the fact of these earthy ingredients being always found in the ashes of the Indian corn, and almost invariably in the exact proportions above stated, it is evident that they are necessary to a healthy growth and full development of the plant, and that the soil must contain them in some quantity or the plant cannot live. Now, suppose an acre of land to contain organic matter enough to furnish the carbon, oxygen, hydrogen, and nitrogen necessary for the production of 40 bushels, and also, that there is inorganic matter enough to supply such an amount of vegetation with the soluble salts, earthy carbonates, silica, and metallic oxides that are required. Suppose, also, that the quantity of earthy phosphates present in the soil is only sufficient for 10 bushels, the phosphates being an essential constituent of the grain, it is evident that, although there may be a large growth of stalk and blade, but 10 bushels of grain can be brought to perfection. Now, by the addition of a small quantity of bone dust, sufficient to furnish the earthy phosphates, the surprising result would be obtained of an increase of 30 bushels per acre from the application of a few pounds of manure, apparently insignificant of itself, but sufficient to bring into action a vast amount of nutritious matter, which, without it, would have been useless.

such an influence, for as the cottons recede from the sea shore they deteriorate in quality. A like change is observable in other plants which grow within the influence of the salt water. The glasswort, (*salsola soda*,) when it grows in inland situations, affords potash; when it grows in the sunshine it yields soda in its ashes.—(*Davy.*) Whether those who plant beyond the reach of this saline atmosphere will ever be able to supply the food so essential to that length and fineness of staple, possessed only to the Sea-island cotton, is a problem yet to be solved. A chemical analysis of the finer and coarser cottons would show in what they differed, and the deficient ingredient it may then be in our power to supply.

On the capacity of our common soils for other agricultural products than cotton.—Our situation, as regards climate and cheapness of labor, gives us advantages over most agricultural nations. Owing to this cause the southern part of our State, and the sea-board of Georgia, have met with but little competition in the rearing of the finer qualities of cotton. We have been devoted so long, however, to our favorite staple that we are as yet, in a great measure, ignorant of our own resources. Mr. Perrine, whose untimely death was a loss to the country, was engaged in the introduction and acclimation of tropical plants in Florida. That his labors would have been crowned with success there is reason to believe. It is worthy of remark that our three great staples, rice, indigo, and cotton, and the favorite sweet potato, were all originally natives of a tropical region. It would be an achievement of which a patriot might be proud if, in the course of a whole life, he could present his country with one object of culture as beneficial as these have been.

Rice was formerly cultivated in our inland swamps and the Santee swamp, and might be again resorted to with profit. To this we shall refer in speaking of the history of the rice culture in our swamps.

Indigo was, for a period of 40 or 50 years, the staple product of our State. It was introduced into Carolina from the West Indies, about the year 1742; and shortly before the war, according to Dr. Ramsay, the export had risen as high as 1,107,660 pounds. During the war more attention was paid to rice; and shortly after, about the year 1771, East India indigo came into competition, and from its superior quality, being the product of a tropical region, so lowered the price of Carolina indigo in the markets as to render its culture unprofitable. Cotton was then introduced and has been the favorite staple since that time.

Now that the *morus multicaulis* fever has passed away and left sober reason to herself again, the silk culture has strong claims on our notice. There is no reason to doubt that it may be successfully reared, particularly in the southern States, where the climate is so mild as to obviate the necessity of artificial heat. By the census statistics of 1840, Massachusetts, in 1839, produced 198,432 pounds of silk cocoons. From the report of the Commissioner of the Patent Office it appears that "the quantity of raw silk manufactured in this country, the past year, is estimated at more than 30,000 pounds." The report goes on to state that "the amount of silk-stuffs brought into this country, in some single years, from foreign countries is estimated at more in value than $20,000,000." This is equal to one-third of the whole cotton crop of the United States, valued at $62,000,000. One of the great advantages of this culture over all others is, that it may be undertaken by persons of limited means, and occupying but six or seven weeks in the spring months, it would not interfere, in our climate, with the cultivation of any crop after the first of May.

Tobacco and *wheat* might also be cultivated with profit in our State. Wheat was formerly cultivated very extensively in the middle and upper country, and the soil there would probably be better suited to that plant than the lighter soils of the low country.

The *palma christi*, or castor-bean, from which the castor oil is made, grows luxuriantly in our climate. From this oil stearine has recently been extracted, an article of which candles that are a good substitute for spermacetti may be made.—*Report Com. of the Patent Office.*

But all these different products of cultivation that innovate upon old customs will be slowly received; their introduction must be the work of time. The farmer is proverbially distrustful of all novelties, and he requires the strongest evidence of a profitable investment before he can be induced to abandon his accustomed occupation. Such, no doubt, was the feeling upon the early introduction of cotton into our country. It is related of a worthy old gentleman of

this parish*—one who had served his country with honor "in the times that tried men's souls," and was afterwards twice called to accept the highest gift of our State—that, actuated with a laudable desire of promoting the agricultural interest, he introduced the cotton-plant from Georgia as an experiment. At the time for harvest the fruit of his labor was nowhere visible; but upon search it was found concealed among the high grass which had taken possession of his field. Many, no doubt, were the prudent forebodings of anxious friends that this novel cultivation could come to no good. But even on those very lands it has yearly yielded its rich return; and now this despised little plant has become the very life-blood of the great nations of the earth, by its mighty pulsations diffusing health or disease, vigor or infirmity, through its giant frame.

On the former cultivation of rice in our inland swamps.—It has been stated before that the swamps forming the tributary branches of Cooper river are extensive. Most of these, and large portions of the Santee swamp, were cleared and cultivated in rice before the introduction of indigo. The exact period of time at which these lands were first cultivated has not been ascertained with certainty, but there is reason to believe that they were cleared for rice about the close of the seventeenth or beginning of the eighteenth century. The original settlers in this section of country were the Huguenots; and their descendants still continue to occupy the soil. The revocation of the edict of Nantes, which took place in 1685, drove vast numbers of these protestant christians from their fatherland to seek in a foreign wilderness that liberty of conscience which was refused them at home. About the year 1690 a large body of Huguenot emigrants landed in Carolina. Their first settlement was lower down on the Santee, but they shortly after moved up and occupied the country now embraced in the parishes of St. Stephen's and St. John's (Berkley.) The original grants from the proprietary government show that these lands about the head waters of Cooper river were among the first occupied. Rice was introduced into Carolina about the year 1693. According to Ramsay's history, as early as 1724, 18,000 bushels were exported. Indigo was not planted until 1742; but it is known that during the cultivation of indigo these swamps were cleared, and had evidently been under previous cultivation. It is quite probable, therefore, that they were cleared and planted in rice shortly after the Huguenot settlement was made.

Indigo, after its introduction, became the favorite staple crop. It was found to be more sure and profitable, and rice was neglected. It continued to be the common staple of the country until about the year 1791, when the East India indigo supplanted Carolina indigo in the markets. In this state of things, which happened just before the introduction of cotton, rice was again resorted to. Cotton had been cultivated in Georgia, but its progress north was slow. The early planters met with failures and discouragements; but they finally succeeded, and rice, since then, has been entirely neglected as a market crop.

Should the value of cotton decline so much as to render a change necessary, these old rice-fields may be reclaimed with comparatively little labor. It is believed that an average crop of 40 bushels per acre might be raised from these lands. Where reserves can be made to supply the fields with water a greater amount of land might be cultivated; but without the assistance of water cultivation, three acres to the hand is as much as can be well attended. The facilities of sending it to market in the rough have been greatly increased by the opening of the Santee canal. The average value of rough rice, for several years past, has been 75 to 78 cents per bushel. At that price, and with a production of 120 bushels per hand, rice would be as profitable as cotton at 20 cents per pound. These remarks apply to the branches of Cooper river. The lands of the Santee swamp are of a much higher order of fertility. Rice was cultivated on those lands after indigo had become the favorite staple elsewhere, and until the increasing recurrence of freshets compelled the planters to desist from so hazardous a culture. When the system of embankment which is now in contemplation shall have been accomplished, these lands will again become, as they once have been, the garden spot of the State. Already the energy and perseverance of one individual† has secured to him a large body of these valuable lands; and should the experiment so successfully begun be effectually carried on through the whole extent of the river-swamp of our State, South Carolina will contain within her borders a tract of country equal in fertility to the Delta of the Nile. With genial

* Gen. Wm. Moultrie.

† Major Samuel Porcher, of St. Stephen's.

climate, and the bright sun of heaven over her, she will draw again to her bosom her alienated sons, and the gracious promise of old will come to gladden her fields with joy, "that while the earth remaineth, seed-time and harvest, and cold and heat, and summer and winter, and day and night, shall not cease."

AGRICULTURAL EDUCATION.

COLUMBUS, *March* 20, 1855.

DEAR SIR: Your esteemed favor of the 17th instant has been received. You will please accept my thanks for the concern which you are manifesting in the promotion of the great agricultural interests of the country. I think your plan is not only beautiful in theory, but well suited to impart valuable information, and perfectly practicable in its adaptation to the wants of the country. It is difficult, however, to anticipate what public sentiment will approve, and it occurs to me that it might be well to elicit expressions of opinion by a little agitation of the subject before the public, and I therefore suggest the propriety of publishing your letter, and tender to you the privilege of the columns of *The Soil* for such additional thoughts as you may desire to offer, in support of the plan. This will probably draw out others, and in this way the whole subject may be discussed, and the public mind be prepared for its adoption. I have not thought sufficiently on the subject to very confidently offer an opinion, but should be glad to have the question examined, and see some move made for the training of the young men of our country, to meet the emergency which our wretched systems of culture has forced upon us. You will please excuse me for not saying more on this subject now as it is one which concerns the whole country, and I hope you will consent to let *them* have the benefit of what either of us may have to say.

I am, very respectfully, your obedient servant,

JAMES M. CHAMBERS.

REV. C. P. MARTIN.

SYNODICAL COLLEGE, GRIFFIN, GEORGIA, *March*, 1855.

DEAR SIR: The interest you have manifested in efforts to promote agricultural improvement, and the opportunity your position as editor of *The Soil of the South* has given you to judge correctly concerning the *practicability* of the plans which may be entered upon for that purpose, induce me to address you and ask your opinion respecting the probable success of an enterprise which I have long desired to carry into operation, but concerning the *success* of which, though all agree as to its *desirableness* and *usefulness*, there has nevertheless obtained among my friends, to whom I have submitted my plan, a difference of opinion. The enterprise to which I refer is a *scientific and practical school connected with agriculture*. That you may be able to form a correct judgment concerning the enterprise, I will lay my *plan* before you a little more fully.

And first, the Course of Study.

I. THE ENGLISH LANGUAGE.—In its orthography, its grammar, its rhetoric, its logic.

II. THE EARTH.—Its geography, mineralogy, geology, and chemistry.

III. NUMBER AND QUANTITY.—Embracing arithmetic, algebra, geometry, trigonometry, surveying, civil engineering.

IV. NATURAL AND MORAL SCIENCE.—Embracing natural philosophy, meteorology, botany, chemistry, agricultural chemistry, ethics.

V. Intellectual philosophy, political economy.

SECOND ITEM.—In connexion with the school I propose to have a *farm*, say of two hundred acres of land, to be cultivated in the most careful and scientific manner, and every operation of the farm to be made the subject of *daily observation and note*, by the students of the school. A regular *note book* is to be used by each student for the daily record of every operation, and an hour each day is to be appropriated for *farm inspection* as much as for recitation in the school-room. Observations will also be made and notes taken concerning the weather, the amount of rain, and other phenomena in meteorology.

I do not deem it necessary to enter into a minute explanation of the *application* or *the carrying out* of this plan in detail to *you*, for you will at once perceive that it embraces the *character of the soil, the kind of manures* used, and the *manner of preparing them*, as also the mode and time of applying them, the manner of ploughing; the kind of plough; the time of ploughing; the time and manner of planting; the culture; the result.

The carrying out of the plan just sketched will be a *scientific school*, for all the knowledge acquired would be *classified* science, being classified knowledge; it would also be a *practical school*, for all the knowledge acquired would be at once applied. Agricultural chemistry in some form or other would be a subject of daily study. With the smaller students, such a text book as Johnston's "Agricultural Catechism" would be used, and with the larger or more advanced scholars, Gray's "Agricultultural Chemistry," or some other of equal value, as Johnston's, Liebig's, Waring's, &c.

I do not propose to make it a manual labor school; the labor on the farm is to be performed by farm hands as on any other plantation. The farm and all operations are, so far as the school is concerned, merely for *observation, illumination, and experiment*. It is to be the great *laboratory* of the school—it is to be its *cabinet and herbarium*. This being the case, you at once perceive that *Botany, Mineralogy, Geology, and Agricultural Chemistry* will be taught *practically*.

I do not now propose in this communication any argument to show the advantages, distinctive and characteristic, which must result from an education conducted on this plan They lie so apparent, it seems to me, upon the very surface of the system, that I only wonder that all the schools in the land have not been modeled upon this *practical idea*. I will, however, simply add the remark that the *distinctive characteristics* of the plan of education I propose, are *observation, experiment, and practical application*. I wish to see a system of education established which shall develope more fully the powers of observation of correct reasoning, of just analysis and of drawing correct conclusions from the fact observed and the analysis made. And would not the system I am laying before you accomplish these ends? Is it not based upon the true Baconian philosophy, of induction of principles and practice from observed facts? Who can estimate the amount of useful knowledge a youth would acquire in three or four years, say from fourteen to eighteen years of age, under such a system of *observation and experiment* as I have mentioned? Would he not know arithmetic? Could he not survey a field? Would he not be familiar with *botany, mineralogy, geology, chemistry?* Would he not be familiar with the composition of soils and manures, of plants and grains?

We have had exhibited in Georgia, within the past year, a noble illustration of the high estimation in which agricultural knowledge is held by one of our most distinguished citizens. I allude, of course, to the liberal endowment of the Terrel Professorship in the State University for Agricultural Chemistry, by Dr. Terrel, of Sparta; I can speak of this donation, so far as the *animus* of the endowment is concerned, in none other than terms of the highest commendation, but I cannot think, however, that the mode of applying it is altogether the most effective and best calculated to accomplish the end desired. Had the same amount of money been expended in founding a school such as I have sketched, it does strike me that it would have accomplished a vast deal more good. It is true, that a learned and competent professor has been found in Dr. Lee to fill the chair, yet we know that what we learn *practically* in all the sciences—botany, mineralogy, geology, chemistry—which sciences are the *frame work and soul* of agriculture, is of infinitely more value to us than the demonstrations of the lecture room, however learned and beautiful. These, we know, are soon forgotten. What we most want to advance the noble science of agriculture is the *blending together* of the demonstrations of the lecture-room and the demonstrations of practice. Let the student see the operation as well as learn the fact.

Much good sense is found in a short article in the January number of *The Soil*, taken from the *Working Farmer*, called "Agricultural Education." Its recommendations tally with my plan. Please let me hear from you at your earliest convenience. If I have failed to make myself fully understood, I shall write you again. I am just out of bed from an attack of neuralgia, and I am scarcely able to write at all. Very truly, your obedient servant,

CARLISLE P. B. MARTIN.

Col. JAMES M. CHAMBERS.

SOMETHING FOR COTTON PLANTERS.

We have had on our table for some weeks, but we have been prevented from using it sooner by the pressure of other matter, a description in the Nashville Farmer's Banner of a new invention, called the "Cotton Leaf Cleaner and Boll Picker." The inventor has obtained a patent for it. He is a cotton planter of Alabama, and is said to be a gentleman of fine education and general information. He is making alterations in the machine, and will soon have his models ready for examination and trial. The object aimed at by him is to bring into use an instrument for picking cotton, and to improve its value by removing the leaf and dirt, and thus send it clean to the gin.

Speaking of this invention, a correspondent of the Banner says:

"It comes, a welcome ally, to aid in the great army of cotton-pickers, whose labors are tedious and severe. It brings iron fingers and mule muscles to do the work now done by human fingers, and thus accomplishes in three days what now requires six. It can be worked by any power that will work a gin. A portable horse-power set up in the field will be found convenient, and can be extensively used in October and November, when the seasons are dry. The cotton bolls are to be gathered with as little care as you would corn, and taken to the machine, either in the field or under shelter, as the case may be. Then the machine and the mules take out the bolls, leaf, dirt, and everything, and the cotton comes through the gin as middling to good middling in quality.

"Such a machine, to the cotton growers of the United States, is worth millions, provided it can be made to do what is intended by the inventor. The object to be accomplished is not without difficulties, and if the first machine, which will soon be presented to the public for inspection, makes an approach to the end aimed at, we may feel confident that the defects will soon be remedied by the genius of American talent, and that cotton will be picked by iron fingers instead of human, which will be equal to doubling the field force during the gathering of the crop.

"A planter who cultivates with fifty hands, may, by the aid of this machine, have what is equivalent to one hundred hands in gathering, and that without the expense of feeding them. He is thus enabled to save all that he can make, though he may cultivate the best bottom lands of Mississippi, Yazoo, Arkansas, or Old Caney. The hands can be kept out of the dew and their health preserved. More lands may be opened, and larger quantities cultivated, by driving two mules with sweeps and harrows thirty-six inches wide. That is, on bottom lands, where the rows are five or six feet apart.

"In the cleaning process, a small per centage may be lost, but you save the loss occasioned by standing in the field till February, exposed to winds and rains; and also much of the loss in the spinning-room, which is now ten per cent. from dirt, dust, leaf, &c.

"We shall look with much interest to the operations of this invention. Should it prove successful, it may, in truth, be characterized as a machine which will mark a more important epoch in the progress of the growth and manufacture of the great southern staple than any invention since the construction of the gin."

[*Jackson Mississippian.*

GUN COTTON.—Guns, to be used with gun-cotton, are being made for the Austrian government. A letter from Vienna says: Thirty-two of the new guns (four batteries) to be used with gun-cotton are already finished, and it is believed that one hundred and twenty-eight more (sixteen batteries) are to be cast. The military authorities are extremely reserved just at present, but still it has transpired, that only twelve-pounders will in future be cast, "as they need not be heavier in metal than the old six-pounders if gun-cotton is used, and almost all the Russian field batteries are composed of twelve-pounders." The experiments with gun-cotton still continue, and one result is too remarkable not to be mentioned. A twelve-pound ball was fired from a gun charged with powder at some thick boards prepared for the purpose, and another ball of the same weight was fired from one of the new guns charged with gun-cotton. "Although the new gun was six hundred yards further from the target than the old one, the hole made by the shot from the former was well defined and clean, while the orifice made by the latter was jagged and splintery."

MARKS OF GOOD WORKING OXEN---FEEDING---MANAGEMENT, ETC.

The following I give as my opinion concerning the *marks of a good working ox, &c.:*

1. Long head, broad and oval between the eyes, the eye keen, full, and pleasant; such are marks denoting ability to receive instruction, and a readiness to obey.

2. Forward legs should be straight, toes straight forward, hoof broad, not peaked, distance short between ankle and knee.

These properties enable the ox to travel on paves and hard ground.

3. Full breast, straight on the back, round rib, projecting out as wide as the hip bones; these are indications of strength and good constitution.

In opposition to the above, we find the short-faced ox starts quick at the whip but soon forgets it.

If the ox toes out the strain comes on the inside claw, and when travelling on hard road he will be lame at the joint between the hoof and the hair. When the toes turn out the knees always bend in. The crooked-kneed ox is apt to become lame by holding heavy loads down hill.

Comparison: a straight stick, when set on one end, will bear up more weight than a crooked one.

The ox with very large horns near the head is apt to be lazy and will not stand the heat of the day. The black-eyed ox is apt to run away; oxen working in the same yoke should carry their heads on a level with each other.

Oxen working on a stone-drag, and on the foot of a plough, on the sled-spire, or cart-spire, twitching stones or timber, should carry their heads well up, as it will enable them to do this kind of work much easier. Oxen that work as leaders forward of other oxen should carry their heads low.

Oxen should be shod with a broad shoe. To travel on hard road the shoes on the forward foot should be set back at the heel nearly half an inch further than the hoof bears upon it. I have frequently known oxen to be lame in consequence of the shoe being too short at the heel.

The best way of feeding oxen for hard work, give each ox two quarts of meal, wet, and mixed with chopped hay, three times a day, and what hay his appetite naturally craves besides. This is the highest feed the working ox ought to have, and will enable the good ox to work ten or twelve hours every day. I think rye and Indian meal, mixed together, is better than clear Indian. Farmers who do not work their oxen *hard* have no *need* of giving them so much meal.

Steers should be broke quite young. Boys should never yoke them for the sake of a frolic. I think it a good plan for farmers, when they are going a short distance after a load, to take their steers with them and let the steers lead the team towards home. They will learn to draw towards the barn much better than from it. I have found it much easier to learn steers or oxen to *back* by giving them a gentle slap on the nose with the bare hand than by striking them with the butt end of the whip-stick, which is too often done.

When steers are first yoked they may be allowed to walk about in the barn-yard until they are satisfied the yoke will not hurt them. Working the young steer carefully causes his strength to gain with his growth without injuring the latter.

The best pair of working oxen I have ever known were handy before six months old, and are now owned at the State prison, in Charlestown, Massachusetts.

From experience, I do say, in my opinion, steers broke quite young are worth, for hard labor, twenty-five per cent. more than oxen that have come to their growth before they are yoked.

One word to the drivers of oxen. Feed regular, and do not forget the card, especially when they are shedding their coat. Have the yoke the right length that your oxen may walk up straight. Let the bows suit their necks—the yoke and bows to the leaders should set a little snugger than to the nib oxen; never use the whip only out of necessity—when you are about to strike the young steer ask yourself, Will he know what I strike him for? Let each ox have a name; and be sure that every ox in your team knows his name. Never speak a word to an ox without a meaning. Have a particular word to start your team by, that all may haul together; never hurry your oxen when you are riding behind them, lest you learn them to haul apart.

A. G. SHELDON.

BOOK NOTICES.

Cabinet Histories of the States.—We have received from Lippincott, Grambo & Co. the first series of this interesting work, consisting of twelve volumes, handsomely and uniformly bound. The works are thus referred to in the circular of that house, and will be again referred to by us:

First series of twelve volumes, now complete. Edited by William H. Carpenter and T. S. Arthur; cloth.

The publishers of this important series are happy to announce the completion of the first portion, embracing twelve volumes. These are:

1. The History of Virginia.
2. " New York.
3. " Massachusetts.
4. " Georgia.
5. " Connecticut.
6. " Pennsylvania.
7. " New Jersey.
8. " Kentucky.
9. " Ohio.
10. " Tennesse.
11. " Vermont.
12. " Illinois.

History of the Second War between the United States of America and Great Britain, declared by Act of Congress the 18th June, 1812, and concluded by Peace the 15th of February, 1815. By Charles J. Ingersoll. 2 volumes. Philadelphia; Lippincott, Grambo & Co. Mr Ingersoll's work has been for some time known to the country, and is now, or ought to be, in most of our private libraries. It is the only history of what may be called our second war of independence, and though it falls short of what was expected in such a work, it is still entitled to high consideration. The writer has collected and combined a vast mass of information in its pages.

History, Condition, and Prospects of the Indian Tribes of the United States: collected and prepared under the direction of the Bureau of Indian Affairs, per act of Congress. By Henry R. Schoolcraft, LL.D. Illustrated by S. Eastman, U. S. A. Philadelphia; Lippincott, Grambo & Co.

Four volumes of this great national work have appeared and may be obtained complete from the publishers. Each volume is a superb quarto of a thousand or more pages. There are over two hundred beautiful illustrations on steel, many of which are colored. The paper and printing have seldom been equalled in any American publication. We suppose that every gentleman forming a library will not fail to procure a set of the work.

Agriculture and Geology of Mississippi, embracing a Sketch of the Social and Natural History of the State. By B. L. C. Wailes, geologist of Mississippi. Philadelphia; Lippincott, Grambo & Co., 1854. This work was published under the direction of the legislature of Mississippi, and will, no doubt, be in the hands of most of its citizens. It is creditable to the author and to the State. In the present number of the Review we have extracted from its pages, and we will prepare, if possible, an elaborate review for our next issue.

We are indebted to Messrs. Lippincott, Grambo & Co. for a copy of their catalogue, embracing splendid library editions of the standard poets, illustrated, miscellaneous works, juvenile books, law and medical books, school books, histories, dictionaries, classical works, French, German, and scientific works, Bibles and prayer books, superb editions, We shall refer to some of these again.

History of Napoleon Bonaparte; by John S. C. Abbott; with maps and illustrations; in 2 vols. New York: Harper & Bros., 1855.

This work, which originally appeared in parts in Harpers' Magazine, and was read with such greedy interest in every section of the Union, has now been republished complete in two large royal octavo volumes, with many additions and copious notes. It will no doubt be sought for with as much interest as were the original papers. Compared with any other biography of Napoleon, the merits of this are manifest, and none, we believe, have done such ample justice to the great warrior, statesman and philosopher. The illustrations, both wood and steel, are of the finest character.

Literary and Historical Miscellanies; by George Bancroft. New York: Harper & Bros., 1855. Mr. Bancroft has placed himself in the first rank of American historians, and is as familiarly known among the scholars of Europe as of this country. His eloquent style, glowing imagery, luxuriant fancy, go hand in hand with severe research and profound analysis. A volume of his miscellaneous writing will be an admirable companion for the history. Among the subjects embraced are: The Doc-

trine of Temperaments, Ennui, The Ruling Passion in Death, Studies in German Literature, Studies in History, Occasional Addresses.

Practical American Cook Book, or Practical and Scientific Cookery ; by a Housekeeper. New York : D. Appleton & Co , 1855. Though not so elaborate a volume as that of Mrs. Hale, noticed by us last year, this will be a useful handbook for the family. There is room enough for many such treatises. Cookery is inexhaustible. Heaven sends us provisions, but cooks come from less blessed regions.

The Winkles, or the Merry Monomaniacs; an American Picture, with Portraits of the Natives ; by the author of "Wild Western Scenes," &c. D. Appleton & Co. : New York, 1855; Washington, R. Farnham. The leading characters of the book are Edith Winkle, the Merry Widow ; Walter, her Rattling Son ; a "Know-Nothing ;" Miss Wilsome Winkle, an old maid, sister-in-law of the widow, and a monomaniac ; Napoleon Winkle, monomaniac on Great Napoleon's battles ; Ralph Roland, instrument of the Jesuits, &c., &c., &c.

The Summer Land; a Southern Story; by a Child of the Sun. New York : D. Appleton & Co., 1855. The Overseer and his Wife ; The Shadows of Life ; Representative Cities ; King Cotton ; Representative Men, &c., &c. This is an amusing and interesting volume, and we shall take pleasure in referring to it again.

Journey through the Chinese Empire; by M. Huc, author of "Recollections of a Journey through Tartary and Thibet," in 2 volumes. New York : Harper & Bros., 1855. China, which has always been so interesting a theme, has become more so since the great events which have been transpiring within its walls. The American, since our treaties with Japan and the opening of our Pacific coast, feels some of the interest of vicinage, and looks even in that direction for the extension of his commerce and the development of his institutions. The work contains a fine map and gives a full view of the missionary operations in China, and is otherwise most interesting and valuable.

History of Turkey ; by A. De Lamartine, author of the "Girondists," "Travels in the Holy Land," &c. Translated from the French ; 3 vols. ; New York : D. Appleton & Co. Every one is aware of M. Lamartine's familiarity with the East. He tells us in his preface, "The more a history is new in manners, magnificent in events, distant in situations, marvellous in characters, the more it needs to justify the full exactness of its recitals. The testimonies and the documents upon the basis of which we have written are no less numerous than incontestible, independently of those which our divers sojourns in Turkey, our travels in the provinces, our examinations of the celebrated places, the cities, the monuments, the battle-fields, and our personal relations with the most eminent men of the empire, have exceptionally supplied us." As the other volumes appear we shall notice them fully.

The New Pastoral. By Thomas Buchannan Read. Philadelphia: Parry & McMillan, 1855. This is a poem of 250 pages, with a fine steel engraving. The writer has already established a place among our poets.

My Brother's Keeper. By A. B. Warner, author of Dollars and Cents. New York : D. Appleton & Co., 1855. Washington ; Taylor & Maury. Contents: Love in the Market; Yankees Abroad; The Secret Society of Medicine; A Day at the Quakerage; A Night View; The Last Day of December; The 1st of January, &c., &c., &c.

Chemistry of Common Life. By Jas. F. Johnson, M. A., F. R. S., F. G. S., &c. &c., &c., author of "Lectures on Agricultural Chemistry and Geology." Illustrated with numerous wood engravings. New York: D. Appleton & Co. We have extracted from this work in our last number, and intend a full analysis of it. The subjects are: The Narcotics we indulge in—Tobacco; The Hop and its Substitutes; The Poppy and the Lettuce; Indian Hemp; The Betel-nut and the Pepperworts; Coco; The Thorn Apples, the Siberian Fungus, and the Minor Narcotics ; The Poisons we select; The Odors we enjoy.

The Hireling and the Slave. Second edition. Charleston: John Russell, 1855. We extracted one or two passages of this poem in our late number. It is understood to be from the pen of Hon. William J. Grayson, of South Carolina.

Constance Herbert, a novel; by Geraldine E. Jewsbury, author of "Marian Withers," "Zoe," "The Adopted Child," &c., &c. New York: Harper & Bros., 1855. Library of select novels.

The Westminster Review. April number.

Blackwood's Magazine. May number.

London Quarterly Review. April number.

We are indebted to Leonard, Scott & Co. for copies of these able magazines. They are the well known republications of this house, and they are furnished at so low a price as to give them a wide circulation in our country.

History for Boys, or Annals of the Nations of Modern Europe. By John G. Edgar. New York: Harper & Bros. The history of each of the states of Europe are treated of in an interesting manner for the instruction of boys.

Gillespie's Land Surveying, comprising the theory developed from five elementary principles and the practice with the chain alone, the compass, the transit, the theodolite, the plane table. By W. M. Gillespie, A. M., civil engineer. New York: Harper & Bros. We give the title in full, which sufficiently indicates the nature and character of the work, which emanates from an able source, and will, no doubt, become a text book.

A few Months in America, containing remarks on some of its industrial and commercial interests. By James Robertson. London: Longman & Co. We made the acquaintance of Mr. Robertson when in this country. He is a good observer and has noted with much fairness what came under his notice. We have marked many passages for extract and comment, and will refer to this work again.

STATISTICS OF MALES AND FEMALES.

GEORGETOWN, KY., *Feb.* 27.

DEAR SIR: As you are in the line of statistics, I send you, herewith, a copy of the second Registration Report of Kentucky, for 1853. I am the more especially induced to do this, because of a note found at page 101 of your Compendium of the United States Census. I allude to the suggestion of Professor Tucker, whether the excess of male births does not depend upon a greater vitality of that sex enabling them to withstand the dangers of birth.

I cannot see any probability of truth in an answer in the affirmative. On the contrary, I am inclined to believe there is much truth in Dr. Emmons' (the writer in the American Journal of Medical Sciences, alluded to in the beginning of the note) theory. Considerable allowance must be made, however, in receiving the Doctor's impressions as to the physical perfections, &c., of Kentuckians; or, at any rate, of the fact which he seems to think grows out of it, viz: the great excess of male birth. In our reports all still-born children are included in the general table of births. Not so in those of Massachusetts. The male excess among the still-born is much greater than among the live-born, which, of course, makes the difference in Kentucky, as compared with Massachusetts, *appear* much greater than it is in reality.

As it is altogether convenient, I will give you a statement as to sex among the still-born, for two years in Kentucky and three in Massachusetts:

	Massachusetts.			Kentucky.	
	M.	F.		M.	F.
1848—9 months..	22	15	1852...	481	404
1849	62	49	1853...	360	263
1851	134	88		841	567
1852	264	310		482	357
	482	357		1323	924

This exhibits a rather startling aspect as to the male excess of mortality. But, if I mistake not, the notions of our profession, whether based on statistics or not, are, that even before birth the excess of mortality among the males begins.

The first Rhode Island report does not coincide with those of Massachusetts and Kentucky; but the observations are too few to be of much value.

It may be fair to remark, that I have no great reliance upon the correctness of the Kentucky returns, so far as the fact of being still-born is concerned; because, in a number of cases, although a child was returned as born dead, it yet had a name; and it is probable that a number were born alive, but died before the enumeration. But these, probably, were divided between the sexes.

W. L. SUTTON.

J. B. D. DEBOW, esq.

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THE WARS AND FORCES OF THE UNITED STATES.—The following statement of the effective military force engaged in the different wars has been prepared with great care at the office of the Adjutant General, and will be of interest to the general reader:

Effective military force engaged in different wars.

Wars and Frontier Disturbances.	Com'd officers.	Men.	Aggregate.
Late war with Great Britain, 1812	31,210	440,412	471,622
Seminole war, 1817 and 1818.	413	5,498	5,911
Black Hawk war, 1832	491	4,540	5,031
Florida war, 1836 to 1842	1,621	28,332	29,953
Creek disturbances, 1836–'37	794	11,689	12,483
Southwest'n frontier disturbances, 1836	161	2,642	2,803
Cherokee country, 1836 and 1837	236	3,690	3,926
New York frontier disturbances, 1838–'39	115	1,013	1,128
Aggregate	35,041	497,816	532,857
Mexican war, 1846 to 1848	3,131	70,129	73,266
Grand aggregate	38,172	567,945	606,117

War of 1812, commenced June 18, 1812, ended February 17, 1815.

War, Seminole, commenced November 20, 1817, ended October 31, 1818.

War, Black Hawk, commenced April 26, 1832, ended September 21, 1832.

War, Florida, commenced December 28, 1835, ended August 14, 1842.

Creek disturbances, commenced about May 5, 1836, ended September 30, 1837.

Southwestern (Arkansas) frontier disturbances, 1836; no actual war, no fighting; not entitled.

New York (Canada) frontier disturbances, 1838 and 1839; no war, no fighting; not entitled.

Mexican war, commenced April 24, 1846, ended July 4, 1848.

Every regiment of the army, except 1st Dragoons, Mounted Rifles, and 5th Infantry, were engaged in the Florida war.

THE LONGEVITY OF SLAVES.—The compend of the census devotes a section to the subject of the relative mortality of the white and black races in the

United States. In referring to this matter the Charleston *Medical Review* remarks:

"On an examination of this table one fact stands prominently forth; it is that of the greater longevity, both general and extreme, of the black than the white in the slaveholding States. This is a fact pregnant with significance, proving conclusively, as it does, that the almost complete freedom from care, the lightness of his labor, and the physical comforts generally enjoyed by the slaves, combine to increase the duration of his life, not only beyond that of the *laboring white* class, but even beyond the average of the white class of *all* conditions.

"But the difference between the two races in point of longevity would be still greater in favor of the black than is presented in the table, if we deduct a certain proportion of early deaths from the latter, occurring among the mulattoes, who exist in large numbers in the cities of the slave States."

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DE BOW'S REVIEW.

AUGUST, 1855.

LITERARY AND MISCELLANEOUS JOURNAL.

THE COAL PRODUCT OF THE UNITED STATES.

In the February number of the Review, some valuable information upon this subject was presented to our readers. We are now glad of an opportunity to complete the paper:

In the year 1815, when the duty on foreign coal was $3 60, the price in New York was $23 the chaldron of 36 bushels.

From 1816 to 1823, the duty was $1 80, and the average price was $11.

From 1824 to 1834, the duty was $2 16, and the average price was $14.

In 1842 the duty was $1 75 per ton, and the market price was $7 16; and in 1844, with a duty of $1, the price was $5 56. In the year 1846, the duty was altered to an ad valorem one of thirty per cent., or about 45 cents per ton, and the market price since has ranged from $6 50 to $7 50.

Pennsylvania is rich in its coal product. This article is one of the great sources of wealth to that State, and its importance may be seen through the various railroads and canals of that State eastwardly. We refer only to the anthracite region, whose mines seem to be inexhaustible, and we leave out of view the immense production in western Pennsylvania. The latter portion of the State owes its growth mainly to its coal-beds, in conjunction with its iron and glass manufactures.

The maximum capabilities of the transportation companies may be set down at 7,300,000 tons per year, with their present forces, namely:

	Tons.
Lehigh (Canal) Navigation Company	1,300,000
Schuylkill.....do	1,000,000
Reading Railroad	4,000,000
Delaware and Hudson Canal	1,300,000
Total	7,600,000

If we may judge by the increase of the last two or three years, the quantity of coal required by the above conveyances will be 7,500,000 tons for the coming year, and between eight and nine millions for the year 1856. We have received from London the special report of Professor Wilson on the New York Industrial Exhibition, in which document we find a variety of useful information in reference to the manufactures, minerals, mining, and metallurgy, of the United States. His remarks on the iron, lead, copper, and zinc products and manufactures will be a valuable addition to the information already in possession, and will be acceptable as well to the legislator as to the manufacturer and merchant.

Virginia takes the lead among the eastern (or Atlantic) States, as the owner of coal-fields, and is, in fact, one of the prominent States of the whole Union as the possessor of this valuable mineral.

Area of the several States where coal is found, and the coal areas of each, and the proportion of coal.

States.	Area.	Coal areas.	Proportion of coal.
	Sq. Miles.	*Sq. Miles.*	
1. Alabama	50,875	3,400	1-14
2. Georgia	58,200	150	1-386
3. Tennessee	44,720	4,300	1-10
4. Kentucky	39,015	13,500	1-3
5. Virginia	64,000	21,195	1-3
6. Maryland	10,829	550	1-20
7. Ohio	38,850	11,900	1-3
8. Indiana	34,800	7,700	1-5
9. Illinois	59,130	44,000	3-4
10. Pennsylvania	43,960	15,437	1-3
11. Michigan	60,520	5,000	1-20
12. Missouri	60,384	6,000	1-10
Total	565,283	133,132	Nearly 1-4

North Carolina is reputed to hold about as much coal land as Georgia.

From this valuable reference-table it will be seen that Illinois takes the lead, having within her own borders *one-third* of the entire coal region of the United States. Next in importance is Pennsylvania, producing both anthracite and bituminous coals. Of these immense fields Professor Wilson says:

"These comprise the three anthracite coal-fields of Eastern Pennsylvania known as the Southern, or Schuylkill, the Middle, or Shamokin, and the Northern, or Wyoming, and

the Frostburg or Cumberland coal-field, (semi-bituminous,) in the State of Maryland. Besides these beds, a small outlying bed exists in Pennsylvania of semi-bituminous coals, known as the Broadtop, which, however, owing to its insulated position, being without any means of access, is only available for local purposes; and some deposits of considerable area in Virginia, whose importance is being daily recognized, and whose produce is daily finding its way into the markets. The demand, at present, however, is confined chiefly to gas-making purposes.

"Of the three anthracite beds of Pennsylvania, the Southern is, both by situation and magnitude, the most important, and furnishes a large proportion of the entire supply. It presents great facilities of access, which have been made advantageous use of by two canal companies, the Lehigh and the Schuylkill, and by the Reading railroad, which penetrate far into the interior, and form the great outlets for its produce. Other railways are now in progress, which will not only afford additional facilities of transfer to the Atlantic cities, but also open a communication to the latter, and through them to the western markets."

The third in importance is Ohio, having nearly one-third of its area in coal. The returns as to production are not copious, but Sir Charles Lyell, who made critical inquiries on the subject, reported the following as the yield for 1851–'52:

	Bushels.	Tons.
Western Pennsylvania	35,000,000	1,170,000
Virginia	15,000,000	500,000
Eastern Ohio	16,000,000	535,000
Total	66,000,000	2,205,000

At the exhibition were produced samples of coals from Valley Falls, Rhode Island, but the product is of inferior quality.

Of the Virginia coal, twelve miles west of Richmond, and extending fifty miles, the seams are 800 feet in thickness—being the deepest mines known in America. In Belgium some of the mines are known to be from 1,140 to 1,476 feet in depth; in England, 1,000 to 1,794 feet—with an average in Lancashire of 750 feet.

To Mr. Taylor's work (published by J. W. Moore, Philadelphia) we are indebted for the following summary:

Countries.	Area.	Coal area.	Proportion.
	Sq. Miles.	*Sq. Miles.*	1-10
Great Britain, Ireland, Scotland, and Wales....	120,290	11,859	1-52
Spain, (Asturias region,).....	177,781	3,408	1-118
France (area of fixed concessions) in 1845.....	203,736	1,719	1-22
Belgium, conceded lands.....	11,372	518	1-3
Pennsylvania, United States.....	43,960	15,437	
British Provinces of New Brunswick, Nova Scotia, Cape Breton, and Newfoundland.....	81,113	18,000	1-4½ ....
Prussian dominions.....	107,937	.....	....
Austrian provinces containing coal, or lignite....	150,000	.....	1-17
The United States of America.....	2,280,000	.....	1-4
The twelve principal coal-producing States.....	565,283	133,132	
		184,073	

We assume these as, in round numbers, correct; and here we perceive at a glance the vast resources of the United States in their coal-producing regions, when compared with Europe. It must be recollected, too, that several of our States have not had geological surveys; and it would not be surprising if other States than those enumerated were found, hereafter, to possess coal in abundant quantities.

The whole coal region of Europe is, by Mr. Taylor, shown to be only 50,941 square miles, being *somewhat less than that of the western States of Illinois and Indiana*, while England has only 8,139 miles, and Ireland 3,720 miles, the aggregate being somewhat less than that of the State of Ohio. But Great Britain produces annually upwards of 31,000,000 tons of coal; while the yield of Pennsylvania is, perhaps, ten millions of tons.

The consumption of coal in Europe and the United States was estimated as follows in 1845, showing also the square miles of coal formation, the relative proportions, and the value in dollars:

	Square miles.	Production in 1845, tons.	Proportion.	Value.
Great Britain.....	11,859	31,500,000	642	$45,738,000
Belgium.....	518	4,960,000	101	7,689,000
United States.....	133,132	4,400,000	89	6,650,000
France.....	1,719	4,141,000	84	7,663,000
Prussian States.....	Undefined.	3,500,000	70	4,122,000
Austrian States.....	"	659,000	14	800,000
Total.....	.....	49,160,000	1,000	72,662,000

Increased importation of coal into the port of London by sea and land, from 1,667,301 tons in 1822, to 3,461,910 tons

in 1845—108 per cent. in 23 years; from 300,000 tons in 1699 to 3,461,199 in 1845—1057 per cent. in 146 years; from 2,079,275 tons in 1830, to 3,461,199 tons in 1845—66 per cent. in 15 years.

1846	2,953,755 tons.
1847	3,280,420 "
1848	3,418,340 "
1849	3,339,146 "
1850	3,553,304 "

Table showing the quantity of Cumberland coal sent to tide-water from 1842 to 1853:

Year.	Jennings' Valley.	Braddock's Valley.	Total.
1842	757	951	1,708
1843	3,661	6,421	10,082
1844	5,156	9,734	21,890
1845	13,738	10,915	24,653
1846	11,440	18,555	29,795
1847	20,615	32,325	52,940
1848	36,571	43,000	79,571
1849	63,676	78,773	142,449
1850	76,950	119,898	196,848
1851	122,331	135,348	257,679
1852	174,891	159,287	334,178
1853	234,441	225,813	533,980
Tons	764,227	841,020	1,678,773

From the Piedmont region 73,725 tons were sent in 1853, and total up to August 1854, from the Cumberland region 353,154 tons.

We now only propose in this place to introduce an estimate of the condition, as to production, of the iron manufactory or smelting in the year 1845, the latest year in which we could obtain a series of contemporary returns, (*see Taylor's Coal Statistics.*)

The respective proportions are as follows:

1. Great Britain	2,200,000
2. United States	502,000
3. France	448,000
4. Russia	400,000
5. Zollverien or Prussian States	300,000
6. Austria	190,000
7. Belgium	150,000
8. Sweden	145,000
9. Spain (1841)	26,000
10. All other European countries	50,000
Total	4,411,000

MAKE OF IRON IN ENGLAND.

Year.	Furnaces in blast.	Iron produced in Tons.
1830	360	678,417
1840	402	1,396,400
1843	...	1,215,350
1845	...	1,512,500
1848	...	1,998,568
1850	459	2,380,000
1852	655	2,701,000
1854	...	2,250,000
Persons employed in mining.....120,000		

During the ten months ending November 5, 1853, Great Britain exported $75,000,000 worth of iron, and by far the largest portion was taken by the United States. Of pig-iron, the United States received 57,000 tons, and Holland, which comes next upon the list, took 13,000. Of bar, bolt, and rod-iron, the United States took 263,530 tons, or nearly six times as much as Canada, which received the next largest amount.

VALUE OF IRON IMPORTED INTO THE UNITED STATES.

Year.	Value.	Duty	Year.	Value.	Duty.
1844.....	$2,395,760	$1,607,113	1850.....	$10,864,680	$3,269,404
1845.....	4,075,142	2,415,003	1851.....	10,781,312	3,234,094
1846.....	3,660,581	1,629,581	1852.....	18,843,569	5,632,484
1848.....	7,060,470	2,118,141	1853.....	27,015,364	8,104,609
1849.....	9,262,567	2,778,770			

Imports of iron from Great Britain into the United States, (*fractions omitted:*)

Year.	Tons.	Year.	Tons.	Year.	Tons.
1820....	8,000	1830...	21,000	1840...	72,000
1821....	9,000	1831...	41,000	1841...	112,000
1822....	15,000	1832...	45,000	1842...	107,000
1823....	13,000	1833...	62,000	1843...	28,000
1824....	11,000	1834...	47,000	1844...	102,700
1825....	13,000	1835...	63,000	1845...	68,000
1826....	12,000	1836...	91,000	1846...	....
1827....	21,000	1837...	54,000	1847...	....
1828....	22,000	1838...	78,000	1848...	....
1829....	17,009	1839...	85,000	1849...	315,000

The following is a list of prices of coal during the past twelve years at Philadelphia, wholesale; and at New York and Boston by retail:

Year.	Philadelphia.	New York.	Boston.
	Ton of 2240 pounds.	*Ton of 2000 pounds.*	*Ton of 2000 pounds.*
1839.....	$5 50	$8 00	$9 00 to $10 00
1840.....	5 50	8 00	9 00 to 11 00
1841.....	5 00	7 75	8 00 to 9 00
1842.....	4 25	6 50	6 00 to 6 50
1843.....	3 50	5 75	6 00 to 6 50
1844.....	3 37	5 50	6 00 to 6 50
1845.....	3 50	5 75	6 00 to 7 00
1846.....	4 00	6 00	6 50 to 7 00
1847.....	3 85 to $4 00	5 50 to $6 00	6 50 to 7 00
1852.....	3 75	6 00 to 7 00	.....
1853.....	4 25 and 4 50	.....	7 00 to 8 00
1854.....	4 50 and 4 75	7 00 to 8 00	8 50 to 9 00

Table showing the imports of Foreign Coal into the United States annually, from 1821 *to July* 1, 1853.

Year.	Tons.	Year.	Tons.	Year.	Tons.
1821....	22,122	1832...	72,978	1843....	41,163
1822....	34,523	1833...	92,432	1844....	87,073
1823....	30,433	1834...	71,626	1845....	85,771
1824....	7,228	1835...	49,969	1846*...	156,855
1825....	25,645	1836...	108,432	1847†...	148,021
1826....	35,655	1837...	153,450	1848....	196,251
1827....	40,257	1838...	129,083	1849....	198,213
1828....	32,302	1839...	181,551	1850....	180,439
1829....	45,393	1840...	162,867	1851....	478,095‡
1830....	58,136	1841...	155,394	1852....	405,652‡
1831....	36,508	1842...	141,526	1853....	231,508

According to the recent reports of Sir Charles Lyell and Professor Wilson, the coal deposits of the United States present features of great importance and interest to the geologist; their immense area, varying surface, etc., supplying a constant field for the researches of the man of science, and for the development of those economic applications which have of late years given such value to the possession of the mineral fuel. The history of the coal industry of the United States belongs to the present generation; having had no existence anterior to the year 1820. In that year the Lehigh Coal and Navigation Company sent the first fruits of its operations to Philadelphia, in the shape of sundry loads of coal,

* From December 1, 1846, to June 30, 1847.
† For the year ending June 30, 1846. ‡ Value.

amounting in the aggregate to about 365 tons. Its progress from that date will be fully seen in the annexed table showing the aggregate receipts for each year to the end of 1853. The first receipts by the Reading Railroad were in 1841. The present arrangements of this company are such that it is enabled to bring about forty-two thousand tons per week, or six thousand tons per day. The table on the next page will be found valuable and curious for future reference, as it shows the various periods at which the Lackawanna, Wilkesbarre, Shamokin, Lykens Valley, and Dauphin county coal regions were severally opened.

SLAVE MARRIAGES.

The people of North Carolina are agitating a project, and which is soon to be brought before the legislature of that State, that will create a sensation. It is, first, to render legal the institution of marriage among slaves; second, to preserve sacred the relations between the parents and their young children; and third, to repeal the laws prohibiting the education of slaves. Says the Port Gibson (Mississippi) Reveille: If this modification in the law is made in North Carolina, as we are informed it probably will be, other States will no doubt take the matter into consideration. The main features of the movement have been adopted in practice, or at least approved in theory, by nearly all our planters, so far as circumstances would allow; and we cannot but think the modification is well worth the serious consideration of every southern man. Should the southern people think proper, after due investigation, to adopt the regulation in each of the slave States, slavery will then be regarded in an entirely new light, and the enemies of the institution will be robbed of their most fruitful and plausible excuses for agitation and complaint. There may be, however, evils to contend with and objections to be answered in the adoption of such a modification.

THE WIFE'S RIGHTS.

The Supreme Court at Harrisburg, Pennsylvania, has decided that no agreement made before marriage giving a wife the control and disposition of her property is valid, and that after her death the property belongs to her husband, no matter what stipulation she may have made, and he consented to, in regard to it before marriage.

ANTHRACITE COAL TRADE OF THE UNITED STATES.

The following Table exhibits the quantity of Anthracite Coal sent to market from the different regions in Pennsylvania, from the commencement of the trade in 1820 to 1853, inclusive; together with the annual increase, etc., and the importations of foreign Bituminous Coal.

Years.	SCHUYLKILL.					LEHIGH.	OTHER REGIONS.					Aggregate.	Annual increase.	Consumption.	Sold on line of Sch'kill.	Import of for'n coal.
	Canal.	Railroad.	Total.	Pine Grove.	Little Schuylkill.	Total.	Lackawanna.	Wilkesbarre.	Shamokin.	Lykens Valley.	Dauphin county.					
1820	.....	.....	.....	.....	.....	365	.....	.....	.....	.....	.....	365	.....	.....	.....	.....
1821	.....	.....	.....	.....	.....	1,073	.....	.....	.....	.....	.....	1,073	.....	.....	.....	22,122
1822	1,480	.....	1,480	.....	.....	2,240	.....	.....	.....	.....	.....	3,720	.....	.....	.....	34,523
1823	1,128	.....	1,128	.....	.....	5,823	.....	.....	.....	.....	.....	7,101	.....	.....	.....	30,433
1824	1,567	.....	1,567	.....	.....	9,541	.....	.....	.....	.....	.....	11,108	.....	.....	.....	7,228
1825	6,500	.....	6,500	.....	.....	28,393	.....	.....	.....	.....	.....	34,893	25,352	.....	.....	25,645
1826	16,767	.....	16,767	.....	.....	31,280	.....	.....	.....	.....	.....	48,047	13,154	.....	.....	35,665
1827	31,360	.....	31,360	.....	.....	32,074	.....	.....	.....	.....	.....	63,434	15,387	.....	.....	40,257
1828	47,284	.....	47,284	.....	.....	30,232	.....	.....	.....	.....	.....	77,516	14,082	.....	3,154	32,302
1829	79,973	.....	79,973	.....	.....	25,110	7,000	.....	.....	.....	.....	112,083	34,567	.....	3,332	45,393
1830	89,984	.....	89,984	.....	.....	41,750	43,000	.....	.....	.....	.....	174,734	62,651	.....	5,321	58,136
1831	81,854	.....	81,854	.....	.....	40,966	54,000	.....	.....	.....	.....	176,820	2,086	177,000	6,150	86,509
1832	209,271	.....	209,271	.....	14,000	70,000	86,600	.....	.....	.....	.....	363,871	187,051	298,871	10,048	72,978
1833	252,971	.....	252,971	.....	40,000	123,000	111,777	.....	.....	.....	.....	487,748	123,877	434,986	13,429	92,432
1834	226,692	.....	226,692	.....	34,000	106,244	43,700	.....	.....	.....	.....	376,636	Decrease.	415,186	19,429	71,626
1835	339,508	.....	339,508	.....	41,000	131,250	90,000	.....	.....	.....	.....	560,758	184,122	635,935	18,571	49,969
1836	432,045	.....	432,045	.....	35,000	148,211	103,861	.....	.....	.....	.....	682,428	121,670	632,428	17,863	108,432
1837	523,152	.....	523,152	17,000	31,000	223,902	115,387	.....	.....	.....	.....	881,476	199,048	680,441	21,749	153,450
1838	433,875	.....	433,875	13,000	13,000	213,615	78,207	.....	.....	.....	.....	739,293	Decrease.	788,968	28,775	129,083
1839	442,608	.....	442,608	20,639	9,000	221,025	122,800	.....	11,980	.....	.....	819,327	80,034	867,000	30,390	181,551
1840	452,291	.....	452,291	23,860	20,000	225,318	148,470	.....	15,505	.....	.....	865,414	46,087	973,136	28,924	162,867
1841	584,692	850	584,692	17,653	40,000	143,087	192,270	.....	21,463	.....	.....	958,899	93,485	958,899	41,223	155,394
1842	491,602	49,902	540,892	32,381	37,000	272,546	205,253	47,346	10,000	.....	.....	1,108,201	149,102	1,158,001	40,584	141,521
1843	447,058	230,254	677,295	22,905	31,000	267,793	227,605	58,000	10,000	.....	.....	1,263,589	155,588	1,268,589	34,619	41,163
1844	398,887	441,491	839,934	34,916	57,000	377,002	251,005	114,906	18,087	.....	.....	1,631,669	368,180	1,631,669	60,000	87,073
1845	263,587	820,237	1,083,796	47,928	74,000	429,453	273,435	178,401	10,000	.....	.....	2,023,052	391,383	2,023,052	90,000	85,776
1846	3,440	1,233,142	1,287,002	58,926	91,000	523,002	320,000	192,503	12,572	.....	.....	2,348,992	320,940	2,348,992	151,460	156,853
1847	222,698	1,360,681	1,583,374	67,457	106,401	643,973	388,203	284,398	14,904	.....	.....	2,982,309	638,317	2,782,309	226,610	148,021
1848	436,602	1,216,233	1,652,835	61,580	162,626	680,746	437,500	237,271	19,356	.....	.....	3,089,238	106,929	2,889,238	252,837	196,168
1849	589,208	1,115,918	1,605,126	78,299	174,758	801,246	454,240	259,089	19,650	25,325	.....	3,242,866	153,403	3,125,000	239,290	198,213
1850	288,030	1,423,977	1,712,007	70,919	211,960	722,622	550,417	243,250	19,921	37,763	.....	3,356,899	114,033	4,188,725	207,863	180,439
1851	579,156	1,650,270	2,184,240	None.	310,307	989,296	795,095	336,000	24,899	54,200	20,000	4,429,458	981,103	4,738,539	312,367	.....
1852	800,098	1,650,912	2,450,950	66,543	325,099	1,114,026	923,269	319,341	25,846	59,857	32,639	4,998,471	564,013	4,950,000	322,211	.....
1853	888,695	1,582,248	2,470,943	80,660	389,295	1,080,544	1,006,986	442,511	15,500	69,007	29,000	5,195,151	201,680	.....	394,078	231,506
	9,563,826	12,718,870	22,295,396	707,616	2,247,440	9,756,598	7,024,640	2,713,586	234,633	245,232	82,639	43,060,491				

POPULATION, CAPITAL, AND PRODUCTION.*

In presenting the following table, intended to exhibit a comparative view of the population, agriculture, and industrial resources of the United States, some explanation may be expected of the reasons which led to its compilation, in the face of the numerous and elaborate tables which have been laid before the public in the compendium of the census published by order of Congress. Among the numerous subjects of interest, in relation to which correct information is now so generally sought by all enlightened nations, those which illustrate not only the occupations of their population, and exhibit comparative views of the value of the productive industry between the various arts, trades, employments, and professions of a people, but also between the different sections of the same country, ought ever to be regarded of the utmost importance and entitled to the first consideration among enlightened statesmen. It is the value of the productive industry of a country which furnishes the true exponent of its wealth, power, and resources. It is by this we measure its prosperity, its advance in civilization, and its means of defence and security. But we search in vain throughout the publication above alluded to for a table which combines in one view an estimate of the value of the productive industry of the different sections or States of the Union, and of their comparative advance in wealth, power, and resources. We find numerous and elaborate tables, almost infinitely varied—many, indeed, of great value, others again of less importance, and some few, (costing much labor, too,) which perhaps will never be consulted. Although a census was taken of nearly all our valuable productions in detail, their values for the most part have been presented only in the aggregate of the whole United States, as seen in the 190th table. Congress was, in part, responsible for the omission, as there does not appear to have been any schedule ordered for ascertaining the value of the various agricultural productions enumerated. But it is not altogether clear whether the results obtained in this way would have been more satisfactory than those obtained by estimates carefully made by competent persons at Washington; and, as the head of the Census Bureau has undertaken to give an estimate of value of each kind of agricultural produce in the aggregate for the whole United States, it would have required less labor than has been expended on objects of minor importance to have presented an

* National Intelligencer.

estimate of value in detail—at least for each State—by which comparative views of the productive industry of each might have been presented. This having been unaccountably omitted, the object in compiling the following table has been an humble attempt to supply this defect as far as practicable, and thereby combine in one view all the most important elements in relation to population, capital, and production, so as to present comparative views of these between the different States of the Union. If this attempt should be the means of directing the public attention, and especially of those who may in future have in charge the preparation of these tables, to more full and perfect comparative views of the agricultural and other productive industry of the United States, the compiler of the present table will consider his labor not altogether in vain, in being the occasion of a more perfect accomplishment of the main object he had in view.

To present these views in the most satisfactory and instructive way it has been thought best to divide the United States into four characteristic geographical sections. 1. The large southern and southwestern section, engaged extensively in the cultivation of the great staples of cotton, sugar, and rice, with Indian corn as the principal element of subsistence. 2. The southern and southwestern section, engaged principally in the cultivation of grain, tobacco, and hemp, and the rearing of live stock, in which slave labor is employed to a considerable extent, though not upon so large a scale as in the first section. 3. The large northern and northwestern section, engaged very extensively in growing all kinds of grain, hay, root crops, and other agricultural productions of less value. 4. The eastern section, where manufacturing and mechanic arts form leading branches of industry in most of these States, combined with agricultural products, consumed almost exclusively at home, with dairy husbandry also, and fishing and navigation in most of them.

It would have occupied more time and labor than the compiler of the following table could have found it convenient to bestow to have embraced in it all the States. At the same time, he believed it sufficient for the purpose in view to select sixteen of the States, as best calculated, in his opinion, to exhibit not only a fair average of the whole as well as of each section, but also the extremes in the same respect, leaving out, for obvious reasons, all those States which have been admitted into the Union within a period of twenty years, with a single exception, and that in order to avoid a greater objection.

In regard to the estimate of value—the only part of the subject presenting difficulty in arriving at satisfactory results, and requiring more labor than all the rest of the table—it is proper that some explanation should be given. With the exception of a few great leading staple articles, the value has been fixed at the average prices prevailing at the close of the year 1850, and the first part of the year following, in a few of our largest commercial cities, north and south, where the prices have been quoted. If lower rates prevailed in the interior, the difference was made up of the cost of transportation to market; and, as this was mostly earned by the States producing the commodities, it was conceived that this mode of estimating the value was less liable to objection than any other deemed practicable. With respect to the leading articles above alluded to, it was believed that it would be generally more satisfactory and obtain fairer results to assume an average price, running from three to five years, before and after the month of June, 1850, and make this average the basis of the estimate of value. Accordingly a uniform rate for these commodities has been adopted, as follows: Indian corn, 75 cents per bushel; wheat, $1 25 per bushel; cotton, 9 cents per pound, average; sugar, 5 cents per pound, average; tobacco, 7 cents per pound, average; rice in the rough, being returned in this way, 2½ cents per pound; oats, 50 cents per bushel; hay, $15 per ton; potatoes, (Irish,) 50 cents per bushel; ditto, sweet, 40 cents per bushel. The same price has been affixed to the same commodity produced in every part of the United States. The prices assumed as above have been deemed fair relative rates of value; and it is believed that no scale of prices, though varying considerably from these rates, would have materially varied the comparative result, provided the relative value had been preserved with equal fairness.

It is not to be supposed that it is possible to arrive at anything but an approximation to the truth in statistical results. To expect absolute truth would be unreasonable, and those insisting on such an impracticable certainty would soon find it necessary to abandon this field of inquiry. It is sufficient for all useful purposes that we are able to reach an approximation to the truth; and it is, at the same time, undeniable that these approximations are much nearer the exact truth, in the general results, than many would be disposed to imagine. This could be demonstrated in various ways and verified in numerous instances.

Comparative view of the population, land, capital, agricultural, and other productive industry of the United States, compiled from the Census of 1850.

	The sixteen States of the Union selected for comparison.	Aggregate population of 16 States; white, colored, and slaves.	Popula'n per square mile; white, colored, and slaves.	Ratio of increase in the last decade to 1850.	No. of farms in each State named.	No. of acres of improved land.	No. of acres of unimproved land.	Average size of farms; acres.	Average cash value of farms.	Average cash value per acre.	Average production Ind'n corn, p'r acre.	Average production wheat, per acre.	Total amount of productive industry of each State for the year 1850.	Average production per head of the whole population.	Order of precedence in production, industry, and resources.
Three southern and southwestern cotton growing States.	Alabama	771,623	15.21	30.62	41,964	4,435,614	7,702,067	289	$1,533	$5 30	15	5	$57,647,459	$74 07	9
	Georgia	906,185	15.62	31.07	51,759	6,378,479	16,442,900	447	1,850	4 20	16	5	63,797,659	70 03	14
	South Carolina	668,507	22.75	12.47	29,967	4,072,551	12,145,049	541	2,750	5 08	11	8	42,829,237	64 00	15
	Average		17.86	24.72	41,230	4,962,214	12,096,672	423	2,044	4 83	16	6		69 06	
Four southern and southwestern grain growing States.	Kentucky*	982,405	26.07	25.96	74,777	5,968,270	10,981,478	227	2,073	9 13	24	8	87,721,937	89 03	4
	Maryland	583,034	52.41	24.04	21,860	2,797,905	1,836,445	212	3,998	18 79	23	13	40,707,467	70 00	13
	Missouri*	682,044	11.67	77.75	54,458	2,938,425	6,794,245	179	1,161	6 49	34	11	59,219,438	86 08	6
	Virginia	1,421,661	23.17	14.67	77,013	10,360,135	15,792,176	340	2,810	8 27	18	7	85,051,637	59 08	16
	Average		27.91	35.60	57,024	5,491,184	8,901,086	239	2,516	10 67	25	10		76 05	
Six northern and northwestern grain growing States.	Indiana*	988,416	29.24	44.11	93,896	5,046,543	7,746,879	136	1,453	10 69	23	12	80,354,477	81 03	7
	Michigan	397,654	7.07	87.34	34,089	1,929,110	2,454,780	129	1,521	11 79	32	10	29,453,398	74 00	10
	Ohio*	1,980,329	49.55	30.53	143,810	9,851,493	8,146,000	125	2,495	19 96	36	12	149,577,898	75 05	8
	New Jersey	489,555	58.41	31.14	23,905	1,767,991	984,955	115	5,030	47 21	33	11	44,140,708	90 01	3
	New York	3,097,394	65.90	27.52	170,612	12,406,964	6,710,120	113	3,250	28 76	27	12	269,437,323	86 09	5
	Pennsylvania	2,311,786	50.26	34.09	127,577	8,623,619	6,294,728	117	3,197	27 82	20	15	162,988,245	70 05	11
	Average		45.10	42.48	98,980	6,604,620	5,389,577	122	2,824	24 28	30	12		79 07	
Three eastern agricultural and manufacturing States.	Connecticut	370,792	79.33	19.62	22,445	1,768,178	615,701	106	3,240	31 56	40		40,489,055	109 02	1
	Massachusetts	994,514	127.50	34.81	34,069	2,133,436	1,222,576	99	3,102	31 33	31	16	102,995,869	103 05	2
	Vermont	314,120	30.76	7.59	29,763	2,601,409	1,524,413	139	2,129	15 50	32	13	21,961,184	70 00	12
	Average		79.19	20.67	28,759	2,167,674	1,120,896	114	2,823	26 13	34	15		94 02	

* There does not appear to have been any returns or estimates for horses, mules, hogs, and other live stock from these States and some others driven to various markets and sold or slaughtered for market, which would have considerably enlarged the estimate of their productive industry.

Upon a careful examination of the above table the following comparative results, taking the average of the different sections in the table, would appear too obvious to escape attention, and from the constant order of succession in which they occur would seem to depend upon some fixed law or constantly operating cause calculated to invite the attention and investigation of political economists and statesmen:

1. Farms regularly diminish in size, taking the average of the different geographical sections of the table, as we proceed from south to north and east.

2. The proportion of improved to unimproved land occupied or appropriated regularly increases, taking the averages in sections as above from south to north and east, and this occurs irrespective of the density of population, taking in the whole area of the States compared.

3. The cash value of farms, both in the aggregate and per acre, regularly increases, as averaged in sections of the table, from south to north and east, and this result is in most instances irrespective of the density of the population.

4. The production of Indian corn and wheat averaged in the geographical sections of the table increases without an exception from south to north and east.

5. The production of Indian corn, as compared in States of the same geographical section, diminishes in the older States south, and increases in the older States north and east, on the Atlantic slope. Pennsylvania, and perhaps Georgia, are exceptions. It observes the same general law in the southwestern and northwestern States, separately considered.

6. It is worthy of special attention that the productive industry of the people of the United States *per capita* observes the same general law as landed capital and agricultural produce, and regularly increases from south to north and east, averaged in sections as above; but, when States in the same geographical section are compared, presents frequent exceptions, and when sections are separately considered, and the States therein compared, seems to depend mainly on the fertility of the soil (whether natural or artificial) and the amount of labor put in motion in manufacturing and the mechanic arts. Alabama, Kentucky, Missouri, New Jersey, New York, Connecticut, and Massachusetts are instances where these two elements, separately or combined, have produced highly favorable results in their respective sections.

7. The density of population and the ratio of increase are also favorably influenced, as we would naturally conclude, by these two important elements of productive industry, and found generally to be accelerated in those States where either

the fertility of the soil and the facility of acquiring it, or where abundant moneyed capital is constantly inviting new accessions of labor in manufacturing or mechanic arts and kindred branches of industry. Of the States selected for comparison Georgia and Alabama, of the southern and southwestern cotton-growing States; Maryland, Kentucky, and Missouri, of the southern and southwestern grain-growing States; Pennsylvania, New Jersey, Indiana, and Michigan, of the northern and northwestern grain-growing States; and Massachusetts, of the eastern States, are conspicuous instances in the last decade where these two causes, separately or combined, have favorably influenced the increase of population.

JUNE 11, 1855. HAMILTON.

MASSACHUSETTS---REMOVING JUDGE LORING.

The Boston Monthly Law Reporter presents an able article reviewing this flagitious act, denouncing it in the terms it deserves, and concluding with the following:

That Judge Loring has violated no law of Massachusetts; that he had no reason to suppose that his acting as a commissioner in the Burns case would be offensive to the people of Massachusetts; that, in fact, it was not; that this persecution is owing not to such acting, but to his decision; that his conduct during the trial was distinguished by humanity, firmness and conscientiousness; that he has neglected no duty of his office as judge of probate; that no complaint has been preferred against him for any short-coming in that office; that he is, in fact, in every way deserving of the confidence of the community; these are facts which we fully believe, and which, we think, can only be denied by men whose moral vision is distorted by party prejudices. We fear that this violation of the judiciary department, this cruel injustice to the individual man, will be consummated, as has already been indicated by the votes of the House of Representatives, and the Senate. Be it so.

Non si male nunc et olim
Sic erit.

The party that made the attack on the judiciary in 1843, by reducing the salaries of the judges of the Supreme Court, never had much reason to boast of their success. In the very next year, probably from this very act, they were in a hopeless minority, and saw their work undone.

We think it obvious that the course which is now pursued against Judge Loring by the opponents of the United States

law of 1850, is a very impolitic one, so far as the real interests of fugitives from labor is concerned. Whatever be the character of that law—nay, the more unjust and oppressive its character—it is for the interest of all except those who may wish to make political capital by agitation, that its application should be left in pure hands. The law of 1850 has been pronounced constitutional by the Supreme Court of Massachusetts and the Circuit Court for this district, and its enforcement is inevitable until it is repealed. Whenever cases may be presented under it, any commissioner who consents to act, may be compelled, if he is a man of any pretension to character, and is not prepared to oppose these decisions, to send back a fugitive.

As long as the law remains in force, men will be found who will act as commissioners, and exercise jurisdiction under it. The bar of this commonwealth, and especially of the county of Suffolk, is not so select as it once was. There are as many good and true men at it as ever, but there are more of an inferior moral standard than there used to be. Now if every man who acts as a magistrate to enforce the law of 1850 is to be persecuted as Judge Loring has been, it is very easy to see that the commisioners must soon be a class by themselves, to whom the mere profits of the office will be a sufficient inducement to brave public opinion, and who will have a direct interest in every case in pronouncing against the fugitive, and with very little principle to deter them from pursuing that interest. When there is a law of such a nature on the statute book, that to pronounce decrees under it in favor of the claimant may be supposed to be the sure way to political favor at the south, and with the general government, and is also doubly more advantageous to the magistrate in a pecuniary point of view, it is all-important to have very pure and honest and strong men to administer it, lest they fall into temptation. The existing commissioners are, we believe, all of them men of entirely irreproachable private character. So far as we know, they are, every one of them, men whose whispered word would (excepting the accidents of life) be considered as good security as their sealed bond. Now if such men are driven out by party rancor from the offices which they hold, it is manifest that the vacated offices must be filled by descending to a lower level, and employing others of an inferior character. We have already been told of one case, and are informed that many others have occurred, where the commissioners have been applied to act under this law in a covert and unfair manner, and that they have refused so to act. This is no merit in them. But men might be in

office who would not be so scrupulous, and whatever odious features there may be in the law might be aggravated by the mode of its administration. While the office of commissioner is filled by such persons as the present incumbents, there is no danger of this kind. We hope they will continue so to be filled while the law remains in force.

In writing this article, we wish most expressly to disclaim expressing any feeling or opinion in favor of the United States law of 1850. We have been dealing only with the question of the judiciary department in Massachusetts. That while the Constitution and the Union endure, the south, under that constitution, are entitled to some law or some means to enable them to reclaim their fugitive slaves cannot be questioned. That the people of any one State are ready to give up the Constitution and the Union on this issue we cannot, we are unwilling to, believe. But we do most sincerely dislike and object to the most odious provisions of this law. We would do as little in obedience to it as is possibly consistent with our duty as citizens, and as persons who, in various capacities, have sworn to obey the laws of the United States. We would strive and hope for its repeal or modification.

But Massachusetts will come to this work with an ill grace if she come with the stigma upon her of having violated the integrity of her judiciary to serve the purposes of a party.

WHAT THE SOUTH IS NOW THINKING AND SAYING ABOUT THE COURSE OF THE NORTH.

We begin first with an extract from the Montgomery Mail:

1. THE TEMPER OF THE SOUTH.—Concerning the slavery question, the south has not been for many years in so quiet a mood. There is a perfect placidity of sentiment throughout the slave States. We have no indignation meetings—no torrents of declamation and denunciation—no fiery threatening resolutions. For all these there is a deep, deep calm. And the reason is, that at length, after decades of bickerings, the whole section is agreed that the day is at hand. At length—at length, and for the first time in many a long year—the south occupies her true position, untrammelled by thrice accursed "compromises," and looking only to the Constitution for the measure of her rights. For the first time, too, she sees her fanatical enemies clothed with full power to do their will, in the House of Representatives of the United

States. And thus there is made, for the first time, the true issue between the north and the south. How it will be decided is another question, but it is glorious that it is to be decided: that a few short months will give the conflict its culmination; and that whether the hordes of free-soilers and abolitionists are driven back impotent, overpowered by the innate conservatism of the whole people, or the south is compelled to withdraw from a government which is fast becoming her greatest enemy—in either event, our real relations with the antagonist section will be brought out in bold relief. The day of hypocrisy and duplicity will be over; our friends will be our friends, and our enemies our enemies.

There never was a time so full of hope for the south, and for the maintenance and the extension of slavery. The wit of man could not devise for us a better relation than that which we occupy to the forces of free-soilism. We battle not for half our rights, but for the whole. Our enemies have ample power in one House to do that thing which all parties in the south have said shall be cause for dissolution; and for all the purposes of detriment to the south the action of that House will be as potent as if the deed could be carried through all the parliamentary processes necessary to make it a law. The representatives who thus control the House are incited by frantic, howling constituencies at home. Can they recede? The south cannot. If she did, Cuban vassalage would be too mild a doom for her degenerate sons.

Out of this "nettle, danger," if the south has true men in Congress, shall she "pluck the flower, safety." The whole people of the south see the question as it really is. They are assured, at last, and are rejoiced by the assurance, that *pro-slavery* and *no-slavery* are at length to have an honest, fair, open fight—and they have courage and faith. The south can only fail of success and a bright future, on a supposition which is almost an insult to her to make—that she would consent to remain in the Union, after one branch of the national legislature had made a deliberate attack upon her rights, by a repeal of the fugitive slave law, or the passage of a bill abolishing slavery in the District of Columbia.

So we say, the "good time" is nearly come. God hasten it! Our people see its approach, and hail it with *quiet* satisfaction. There is no need for noise, the final contest is just ahead, and we could not avoid it if we would, nor would we if we could.

2. SOUTHERN REMEDIES.—The following is from the New Orleans Bulletin:

Under the "personal liberty law" no open action as yet has taken place. Even the public gazettes have scarcely noticed the subject, so far as I can ascertain. Our people are scattered for the summer, hundreds spending their money in pleasure excursions or purchases in Massachusetts. No, my good friends of Bunker Hill and Lexington, (and long may I be permitted to address you as such,) there has been as yet no open action. Some of our bees and butterflies have fluttered off among you, but we who are toiling here at home consult together about your "liberty law" and other movements, and I have leave to tell you some things which are more than hinted at if such laws are to be enforced.

First.—Excluding your ships.

Second.—Excluding your manufactures.

Third.—Ceasing our visits to your borders, already unsafe, and more or less unpleasant.

Fourth.—Requiring your citizens trading here at least to take out licenses, perhaps to furnish bond for good behavior.

How will such laws suit you? Of course not at all. They trench on that provision of the Constitution which declares that the citizens of each State shall be entitled to all the privileges and immunities of citizens in the several States. They certainly do, my conscientious friends, and such laws operate against all other rights the people of the several States have in other States under the its Federal Constitution. We know it; but we know also that this is precisely our objection to this "liberty law," which has made all the trouble, and that its unconstitutionality has been pronounced by our highest tribunals.

All your reasoning would have done very well, so long as you held to your bargain—so long as you yourselves submitted to the paramount law, and recognized our rights under its guarantees—so long as Massachusetts held to her obligations and place in the great American family. But now you have repudiated a right of most vital importance to us, and passed a law to fine and imprison as felons our citizens who may claim their rights under that Constitution. Why wait for a formal rupture and separation from you? You have not done so. Our compact is broken by *you*. There is little obligation on us to respect the rights of your citizens or their property, when you openly trample on ours. There is as little to restrain a mob from taking possession of one or more of your ships, as there was to restrain your mob in the case of

the negro Burns, from their assaults on the court and its officers, and from murdering the marshal, Batchelder. Your law now virtually justifies and sanctions that and all future murders.

No reason warrants or palliates your conduct which would not, with greater force, justify our course. Your acts will be the cause—our's but the effect and sequence. Should such a state of affairs happen as I have here forshadowed, of course you will do us all the mischief you can. This we expect, come what may. For several years past you have given us an earnest of what you have been doing. Nor have Pennsylvania and others of you been idle. (Has the law yet revenged the murder of Gorsuch?) Many of us are of opinion that you can do nothing much worse than you are doing. If you imagine the loss of your merchandise, manufactures and supplies will distress and injure us, you greatly mistake. We can wear our old clothing another year, though we should receive none from abroad; and that year will suffice to set head and hands enough at work to remedy all. Our climate is mild, our soils fertile; we can live within ourselves. Look around and examine how many resources we have, even could you induce all the New England States to combine. We have only to look ahead—to those who will be delighted at the chance of supplying us, and whom we can and do amply supply with the raw materials—it indeed we do not take both supply and demand into our own hands, of which there are some very significant indications.

Let us take the case of a transaction in common life—the case of a man who has purchased property and given his bond to pay the price, but finds that the seller has contrived to obtain possession of that property. Do the laws of the land, the laws of honesty or morality, require him to pay his bond? Here is a plain question of common, every day business, to be plainly and categorically answered. If neither the laws of the land nor the laws of morality require it, in what code will you find the law which requires one party to a compact, individual or State, to fulfil his obligations after the other has broken and denied his part of their agreement? Perhaps you may find it in that higher law which has been referred to to sustain your abolition pretensions, for nowhere else can it be found?

You have administered mob law to many of our citizens. This personal liberty law is but the enactment of a mob-legislature, reckless of their oaths to support the Constitution

of the United States. We desire not to be learned in such law, or to touch the unclean thing. We abhor it. But we refer to it to remind you of what you seem to think is to be used by you alone; to admonish you that with your violation of our chartered rights there may arise the recollection of our own resources in the way of *lex talionis*, and your citizens at home, as well as here, may realize the vulgar adage that "Two can play at that game." FAIR PLAY.

P. S.—At a future day you may hear from me again; the subject is far, very far from being exhausted, or even fairly unfolded.

COOPER'S WELL, MISSISSIPPI, *June* 17, 1855.

3. THE SLAVE ROSETTA.—The following shows the public sentiment of Kentucky in regard to the decision in Ohio setting free a Kentucky slave:

The meeting was organized by the appointment of Ed. D. Hobbs, president; S. Churchill, John Herr, ——Anderson, vice presidents; Captain W. J. Heady, Secretary.

The following gentlemen were appointed to report resolutions expressive of the sense of the meeting:

W. C. Bullitt, chairman; Daniel Doup, George Hancock, N. Wolfe, Sherrod Williams, R. N. Miller, Dr. R. Miller, Wm. Short, Ben. Cassiday, Capt. W. J. Heady, Jno. O. Bullock, Dr. Senteney, Jno. Downey, Joshua F. Bullitt, Gibson Mallory, Peter Funk.

The following report was made and unanimously adopted:

PREAMBLE.—It is a point of our public political faith, that the provisions of the Constitution should be faithfully and honestly carried out, and on no subject is this duty more imperative than that of slavery. The discharge of this great political duty is alike binding on the States and the general government, and recreancy in either must prove fatal to the Union.

We claim no right for the citizens of Kentucky which we are not willing to extend to others, and, whilst we utterly disclaim any disposition to interfere with the local policy of other States in reference to the institution of slavery, we do most solemnly protest against any and all interference on their part with rights guaranteed to us by the Constitution of the State and that of the Union.

The principles asserted by the State courts of Ohio and other free States have at last reached a point at which the tenure of property is rendered fatally insecure, and our equal rights as American citizens utterly disregarded. Our people can no longer remove with their property from one slave

State to another. or navigate our great western rivers, the common property of all, without being exposed to insult and injury, and deprivation of property under the sanction of the law.

This policy is not only levelled at a domestic institution, over which the State of Kentucky has exclusive cognizance, but is a practical and direct interference with our commercial interests. Neither the State of Ohio nor any other State has the right, under the Constitution of the United States, to deny to the people of Kentucky the free navigation of the Ohio and the Mississippi rivers, and to use their slave labor for that purpose. It is the high and solemn duty of the general government to protect us in the free and undisturbed exercise of these rights.

In the present disturbed and excited state of public sentiment our hope is in the faithful administration of the laws by the federal authorities. We look to the Constitution of the United States, and the patriotic and enlightened spirit in which it originated, as our protection against the inroads of that fanaticism which would deprive us of our rights. The supreme judiciary is the final arbiter to which we must appeal before we relinquish all hopes of an adjustment of this difficult and portentous question.

We cherish the confident belief that the provisions of the Constitution, and the laws made in pursuance thereof, are fully adequate to our protection, and, when rightly understood and properly enforced, will secure the just rights of all.

Resolved, 1st. In view of these principles, we take pleasure in bearing testimony to the manly, bold, and disinterested course of our fellow-citizen, the Rev. Henry M. Dennison, in appealing, though in vain, to the constituted authorities for a vindication of his rights; we say *disinterested* because it is generally understood by the people of Kentucky, that the cost of recovering a slave under the Fugitive Slave Law usually exceeds the value of the slave.

2d. That, as citizens of Kentucky, we feel an honest pride that he did not shrink from the faithful discharge of his duty as a believer.

3d. That H. H. Robinson, United States marshal in Ohio, is entitled to our thanks for the bold and faithful discharge of his duty as an officer on the occasion aforesaid.

4th. That it is the duty of the State of Kentucky to do all things necessary, and which are not prohibited by the Constitution of the United States, for the protection of her citizens against the oppressions by the legal authorities of other States.

5th. That the next legislature of Kentucky are hereby requested to appropriate such sum of money as may be needed to pay all the losses, expenses, costs and damages which the Rev. Henry Dennison has incurred or may incur, by reason of the illegal interference of the State courts of Ohio, and by reason of two suits now pending against him in Ohio, and any other suits that may arise out of his attempt to assert his right to the slave Rosetta. And that such sums of money as Kentucky may pay in consequence of unlawful aggressions, by the legal authorities of Ohio, be demanded of the government of Ohio by the government of Kentucky, and suit brought, if necessary, in the Supreme Court of the Union.

6th. Our right of transit through the free States, with our slaves, is a perfect right under the Constitution of the Union.

7th. That the people of every county of Kentucky and of the city of Louisville are earnestly entreated in mass meeting to express their opinion on the subject of the foregoing resolutions.

8th. That the editors of each newspaper in Kentucky are respectfully requested to publish these proceedings.

9th. That the people of Kentucky hold themselves ready, as they ever have done, to aid the general government in vindication of the supremacy of its Constitution and laws and the overthrow of nullification, come from what quarter it may.

10th. Wm. C. Bullitt, Samuel S. Geiger, George Hancock, and Edward D. Hobbs, are appointed a corresponding committee, for the purpose of calling the attention of the other counties of this State to this matter and invoking their aid, by calling mass meetings of the people, and sending petitions to the next legislature.

This committee are also instructed to visit Frankfort on the second Monday of the session of the legislature and lay these our resolutions and proceedings before them.

LAFITTE, "THE PIRATE"—EARLY TIMES IN THE SOUTHWEST.

Several years ago we became involved in a discussion relating to the character and deeds of Lafitte, a name so often referred to in the chronicles of the southwest. One of the editors of the New Orleans Delta was the leading party in the discussion, and he has lately gone over the whole field of Lafitte's life and times in one of the numbers of that paper. The

subject is one of such wide interest that we transfer with pleasure the entire chapter to our pages. It is one of a series of papers published in that journal entitled Jackson and New Orleans.

About one mile above New Orleans, opposite the flourishing city of Jefferson, and on the right bank of the Mississippi, there is a small canal, now used by fishermen and hunters, which approaches within a few hundred yards of the river's bank.

The small craft that ply on this canal are taken up on cars which run into the water by an inclined plane, and are then hauled by mules to the river. Launched upon the rapid current of the Mississippi, these boats are soon borne into the crescent port of New Orleans. Following this canal, which runs nearly due west for five or six miles, we reach a deep, narrow, and tortuous bayou; descending this bayou, which for forty miles threads its sluggish course through an impenetrable swamp, we pass into a large lake, girt with sombre forests and gloomy swamps, and resonant with the hoarse croakings of alligators and the screams of swamp fowls.

From this lake, by a still larger bayou, we pass into another lake, and from that to another, until we reach an island, on which are discernable, at a considerable distance, several elevated knolls, and where a scant vegetation and a few trees maintain a feeble existence. At the lower end of this island there are some curious aboriginal vestiges, in the shape of high mounds of shells, which are thought to mark the burial of some extinct tribes of aborigines. This surmise has been confirmed by the discovery of human bones below the surface of these mounds. The elevation formed by the series of mounds is known as the Temple, from a tradition that the Natchez tribes of Indians used to assemble there to offer sacrifices to their chief deity, the "Great Sun." This lake or bayou finally disembogues into the Gulf of Mexico by two outlets, between which lies the beautiful island of Grand Terre.

This island is a pleasant sea-side resort, having a length of six or eight miles, and an average breadth of a mile and a half. Towards the sea it presents a fine beach, where those who love "the rapture of the lonely shore, who delight in the roar and dash of the foaming billows, and in the ecstacy of a bath in the pure, bracing surge, may find abundant means of pleasure and enjoyment.

Grand Terre is now occupied and cultivated by a Creole family, as a sugar plantation, producing annually four or

five hundred hogsheads of sugar. At the western extremity of the island stands a large and powerful fortification, which has been quite recently erected by the United States, and named after one of the most distinguished benefactors of Louisiana, Edward Livingston. This fort commands the western entrance or strait leading from the Gulf into the lake or bay of Barataria. Here, safely sheltered, some three or four miles from the Gulf, is a snug little harbor, where vessels drawing from seven to eight feet of water may ride in safety, out of the reach of the fierce storms that so often sweep the Gulf of Mexico.

Here may be found, even now, the foundations of houses, the brick-work of a rude fort, and other evidences of an ancient settlement. This is the spot which has become so famous in the history and romance of the southwest, as the "Pirate's Home," the retreat of the dread corsair of the Gulf, whom the genius of Byron and of many succeeding poets and novelists has consecrated as one who

> "Left a corsair's name to other times,
> Linked with one virtue and a thousand crimes."

Such is poetry—such is romance. But authentic history, by which alone these sketches are guided, dissipated all these fine flights of the poet and romancer.

Jean Lafitte, the so-called pirate and corsair, was a blacksmith from Bordeaux, France, who, within the recollection of several old citizens now living in New Orleans, kept his forge at the corner of Bourbon and St. Phillip streets. He had an older brother, Peirre, who was a sea-faring character, and had served in the French navy. Neither were pirates, and Jean knew not enough of the art of navigation to manage a jolly boat. But he was a man of good address and appearance, of considerable shrewdness, of generous and liberal heart, and adventurous spirit. Shortly after the cession of Louisiana to the United States, a series of events occurred which made the Gulf of Mexico the arena of the most extensive and profitable privateering. First came the war between France and Spain, which afforded the inhabitants of the French islands a good pretence to depredate upon the rich commerce of the Spanish possessions—the most valuable and productive in the New World. The Gulf of Mexico and Carribean sea swarmed with privateers, owned and employed by men of all nations, who obtained their commissions (by purchase) from the French authorities at Martinique and Gaudaloupe. Among these were not a few neat and trim crafts belonging to the staid citizens of New England, who,

under the tri-color of France, experienced no scruples in perpetrating acts which, though not condemned by the laws of nations, in their spirit as well as in their practical results, bear a strong resemblance to piracy. The British capture and occupation of Gaudaloupe and Martinique, in 1806, in which expeditions Col. Edward Packenham, who will figure conspicuously in these sketches, distinguished himself, and received a severe wound, broke up a favorite retreat of these privateers. Shortly after this, Columbia delared her independence of Spain, and invited to her port of Carthagena the patriots and adventurers of all nations, to aid her struggle against the mother country. Thither flocked all the privateers and buccaneers of the Gulf. Commissions were promptly given or sold to them to sail under the Columbian flag, and to prey upon the commerce of poor old Spain, who, invaded and despoiled at home, had neither means nor spirit to defend her distant possessions. The success of the privateers was brilliant. It is a narrow line, at the best, which divides piracy from privateering, and it is not at all wonderful that the reckless sailors of the Gulf sometimes lost sight of it. The shipping of other countries was, no doubt, mistaken for that of Spain. Rapid fortunes were made in this business. Capitalists embarked their means in equipping vessels for privateering. Of course they were not responsible for the excesses which were committed by those in their employ, nor did they trouble themselves to inquire into all their acts. Finally, however, some attention was excited to this wholesale system of legalized pillage. The privateers found it necessary to secure some safe harbor, into which they could escape from the ships of war, where they could be sheltered from the northers, and where, too, they could establish a depot for the sale and smuggling of their spoils. It was a sagacious thought which selected the little bay or cove of Grande Terre for this purpose. It was called Barataria, and several huts and store-houses were built here, and cannon planted on the beach. Here rallied the privateers of the Gulf, with their fast-sailing schooners, armed to the teeth and manned by fierce-looking men, who wore sharp cutlasses, and might be taken anywhere for pirates, without offence. They were the desperate men of all nations, embracing as well those who had occupied respectable positions in the naval or merchant service, who were instigated to their present pursuit by the love of gain, as those who had figured in the bloody scenes of the buccaneers of the Spanish Main. Besides its inaccessibility to vessels of war, the Bay of Barataria recommended itself by another important consideration: it

was near to the city of New Orleans, the mart of the growing valley of the Mississippi, and from it the lakes and bayous afforded an easy water communication, nearly to the banks of the Mississippi, within a short distance of New Orleans. A regular organization of the privateers was established, officers were chosen, and agents appointed in New Orleans, to enlist men and negotiate the sale of goods.

Among the most active and sagacious of these town agents was the blacksmith of St. Phillip street, who, following the example of much greater and more pretentious men, abandoned his sledge and anvil, and embarked in the lawless and more adventurous career of smuggling and privateering. Gradually by his success, enterprise, and address, Jean Lafitte obtained such ascendancy over the lawless congregation at Barataria, that they elected him their captain or commander. There is a tradition that this choice gave great dissatisfaction to some of the more warlike of the privateers, and particularly to Gambio, a savage, grim Italian, who did not scruple to prefer the title and character of "pirate," to the puling, hypocritical one of "privateer." But it is said, and the story is verified by an aged Italian, one of the only two survivors of the Baratarians, now resident in Grande Terre, who rejoices in the "*nomme de guerre*," indicative of a ghastly sabre cut across the face of "*nez coupé*," that Lafitte found it necessary to sustain his authority by some terrible example, and when one of Gambio's followers resisted his orders, he shot him through the heart before the whole band. Whether this story be true or not, there can be no doubt that in the year 1813, when the association had attained its greatest prosperity, Lafitte held undisputed authority and control over it. He certainly conducted his administration with energy and ability. A large fleet of small vessels rode in the harbor, besides others that were cruising. The store houses were filled with valuable goods. Hither resorted merchants and traders from all parts of the country to purchase goods, which, being cheaply obtained, could be retailed at a large profit. A number of small vessels were employed in transporting goods to New Orleans, through the bayou we have described, just as oysters, fish and game are now brought.

On reaching the head of the bayou, these goods would be taken out of the boats and placed on the backs of mules, to be carried to the river banks, whence they would be ferried across into the city, at night. In the city they had many agents, who disposed of these goods. By this profitable trade, many of the citizens of New Orleans laid the foundations of their fortunes. But though profitable to individuals, this trade

was evidently detrimental to regular and legitimate commerce, as well as to the revenue of the federal government. Accordingly, several efforts were made to break up the association, but the activity and influence of their city friends generally enabled them to hush up such designs. Legal prosecutions were commenced on the 7th of April, 1813, against Jean and Pierre Lafitte, in the United States district court for Louisiana, charging them with violating the revenue and neutrality laws of the United States. Nothing is said about piracy, the gravest offence charged being simply a misdemeanor. Even these charges were not sustained, for, although both the Lafittes and many other of the Baratarians, were captured by Captain Andrew Holmes, in an expedition to the lakes, about the time of the filing of these informations against them, yet it appears they were released, and the prosecutions never came to trial, the warrants for their arrest were returned "not found." These abortive proceedings appear to have given encouragement and vigor to the operations of the Baratarians. Accordingly, we find on the 28th of July, 1814, the grand jury of New Orleans making the following terrible exposure of the audacity and extent of these unlawful transactions: "The grand jury feel it a duty they owe to society to state that piracy and smuggling, so long established and so systematically pursued by many of the inhabitants of this State, and particularly in this city and vicinity, that the grand jury find it difficult legally to establish facts, even where the strongest presumptions are offered."

"The grand jury, impressed with a belief that the evils complained of have impaired public confidence and individual credit, injured the honest fair trader, and contributed to drain our country of its specie, corrupted the morals of many poor citizens, and finally stamped disgrace on our State, deem it a duty incumbent on them, by this public presentation, again to direct the attention of the public to this serious subject, calling upon all good citizens for their most active exertions to suppress the evil, and by their pointed disapprobation of every individual who may be concerned, directly or indirectly, in such practices, in some measure to remove the stain that has fallen on all classes of society in the minds of the good people of our sister States."

The report concludes with a severe reproof of the executive of the State, and of the United States, for neglecting the proper measures to suppress these evil practices.

The tenor of this presentation leads us to the belief that the word piracy, as used by the grand jury, was intended to

include the more common offences of fitting out privateers within the United States, to operate against the ships of nations with which they were at peace, and that of smuggling. Certainly the grave fathers of the city would not speak of a crime, involving murder and robbery, in such mild and measured terms, as one "calculated to impair public confidence and injure public credit, to defraud the fair dealer, to drain the country of specie, and to corrupt the morals of the people." Such language, applied to the enormous crime of piracy, would appear quite inappropriate, not to say ridiculous. It is evident from this, as well as other proofs, that the respectable citizens, several of whom now survive, who made this report, had in view the denunciation of the offence of smuggling into New Orleans goods captured on the high seas, by privateers, which no doubt seriously interfered with legitimate trade, and drew off a large amount of specie.

However, indictments for piracy were found against several of the Baratarians. One against Johnness, for piracy on the Santa, a Spanish vessel, which was captured nine miles from Grand Isle, and nine thousand dollars taken from her; also against another, who went by the name of Johannot, for capturing another Spanish vessel, with her cargo, worth thirty thousand dollars, off Trinidad. Pierre Lafitte was charged as aider and abettor in these crimes before and after the fact, as one who did, upon land, to-wit: in the city of New Orleans, within the district of Louisiana, knowingly and willingly aid, assist, procure, counsel and advise the said piracies and robberies. It is quite evident from the character of the ships captured, that had the indictments been prosecuted to a trial, they would have resulted in modifying the crime of piracy into the offence of privateering, or that of violating the neutrality laws of the United States, by bringing prizes taken from Spain into its territory and selling the same.

Pierre Lafitte was arrested on these indictments. An application for bail was refused, and he was incarcerated in the Calaboose, or city prison, now occupied by the sixth district court of New Orleans.

These transactions, betokening a vigorous determination on the part of the authorities to break up the establishment at Barataria, Jean Lafitte proceeded to that place and was engaged in collecting the vessels and property of the association, with a view of departing to some more secure retreat, when an event occurred, which he thought would afford him an opportunity of propitiating the favor of the government, and securing for himself and his companions a pardon for their offences.

It was on the morning of the second of September, 1814, that the settlement of Barataria was aroused by the report of cannon in the direction of the Gulf. Lafitte immediately ordered out a small boat, in which, rowed by four of his men, he proceeded toward the mouth of the strait. Here he perceived a brig of war, lying just outside of the inlet, with the British colors flying at the masthead. As soon as Lafitte's boat was perceived, the gig of the brig shot off from her side and approached him.

In this gig were three officers, clad in naval uniform, and one in the scarlet of the British army. They bore a white signal in the bows, and a British flag in the stern of their boats. The officers proved to be Capt. Lockyer, of his majesty's navy, with a lieutenant of the same service, and Capt. McWilliams, of the army. On approaching the boat of the Baratarians, Lockyer called out his name and style, and inquired if Mr. Lafitte was at home in the bay, as he had an important communication for him. Lafitte replied, that the person they desired could be seen ashore, and invited the officers to accompany him to their settlement. They accepted the invitation, and the boats were rowed through the strait into the Bay of Barataria. On their way Lafitte confessed his true name and character; whereupon Captain Lockyer delivered to him a paper package. Lafitte enjoined upon the British officers to conceal the true object of their visit from his men, who might, if they suspected their design, attempt some violence against them. Despite these cautions, the Baratarians, on recognizing the uniform of the strangers, collected on the shore in a tumultuous and threatening manner, and clamored loudly for their arrest. It required all Lafitte's art, address and influence to calm them. Finally, however, he succeeded in conducting the British to his apartments, where they were entertained in a style of elegant hospitality, which greatly surprised them.

The best wines of old Spain, the richest fruits of the West Indies, and every variety of fish and game were spread out before them, and served on the richest carved silver plate. The affable manner of Lafitte gave great zest to the enjoyment of his guests. After the repast, and when they had all smoked a cigar of the finest Cuban flavor, Lafitte requested his guests to proceed to business. The package directed to "Mr. Lafitte," was then opened and the contents read. They consisted of a proclamation addressed, by Colonel Edward Nicholls, in the service of his Britannic Majesty, and commander of the land forces on the coast of Florida, to the inhabitants of Louisiana, dated Headquarters, Pensacola, 29th

August, 1814; also a letter from the same, directed to Mr. Lafitte, as the commander at Barataria; also a letter from the Hon. Sir W. H. Percy, captain of the sloop-of-war Hermes, and commander of the naval forces in the Gulf of Mexico, dated September 1, 1814, to Lafitte; and one from the same Captain Percy, written on 30th August, on the Hermes, in the Bay of Pensacola, to Captain Lockyer of the Sophia, directing him to proceed to Barataria, and attend to certain affairs there, which are fully explained. The originals of these letters may now be seen in the records of the United States district court in New Orleans, where they were filed by Lafitte. These letters contained the most flattering offers to Lafitte, on the part of the British officials, if he would aid them, with his vessels and men, in their contemplated invasion of the State of Louisiana. Captain Lockyer proceeded to enforce the offers by many plausible and cogent arguments. He stated that Lafitte, his vessels and men, would be enlisted in the honorable service of the British navy; that he would receive the rank of Captain, (an offer which must have brought a smile to the face of the unnautical blacksmith of St. Phillip street,) and the sum of thirty thousand dollars; that being a Frenchman, proscribed and persecuted by the United States, with a brother then in prison, he should unite with the English, as the English and French were now fast friends; that a splendid prospect was now open to him in the British navy, as from his knowledge of the Gulf coast he could guide them in their expedition to New Orleans, which had already started; that it was the purpose of the English government to penetrate the upper country and act in concert with the forces in Canada; that everything was prepared to carry on the war with unusual vigor; that they were sure of success, expecting to find little or no opposition from the French and Spanish population of Louisiana, whose interests and manners were opposed and hostile to those of the Americans; and, finally, it was declared by Captain Lockyer to be the purpose of the British to free the slaves, and arm them against the white people, who resisted their authority and progress. Lafitte, affecting an acquiescence in these propositions, begged to be permitted to go to one of the vessels lying out in the bay to consult an old friend and associate, in whose judgment he had great confidence. Whilst he was absent, the men who had watched suspiciously the conference, many of whom were Americans, and not the less patriotic because they had a taste for privateering, proceeded to arrest the British officers, threatening to kill or deliver them up to the Americans. In the midst of this clamor and violence, Lafitte

returned and immediately quieted his men, by reminding them of the laws of honor and humanity, which forbade any violence to persons who come among them with a flag of truce. He assured them that their honor and rights would be safe and sacred in his charge. He then escorted the British to their boats, and after declaring to Captain Lockyer that he only required a few days to consider the flattering proposals, and would be ready at a certain time to deliver his final reply, took a respectful leave of his guests, and escorting them to their boat, kept them in view until they were out of reach of the men on shore. Immediately after the departure of the British, Lafitte sat down and addressed a long letter to Mr. Blanque, a member of the House of Representatives of Louisiana, which he commences by declaring that "though proscribed in my adopted country, I will never miss an occasion of serving her, or of proving that she has never ceased to be dear to me." He then details the circumstances of Captain Lockyer's arrival in his camp, and encloses the letters to him. He then proceeds to say: "I may have evaded the payment of duties to the custom-house, but I have never ceased to be a good citizen, and all the offences I have committed have been forced upon me by certain vices in the laws." He then expresses the hope that the service he is enabled to render the authorities, by delivering the enclosed letters, "he may obtain some amelioration of the situation of an unhappy brother," adding, with considerable force and feeling, "our enemies have endeavored to work upon me, by a motive which few men would have resisted. They represented to me a brother in irons, a brother who is to me very dear, whose deliverer I might become, and I declined the proposal, well persuaded of his innocence. I am free from apprehension as to the issue of a trial, but he is sick, and not in a place where he can receive the assistance he requires." Through Mr. Blanque, Lafitte addressed a letter to Governor Claiborne, in which he stated very distinctly his positions and desires. He says:

"I offer to you to restore to this State several citizens, who, perhaps, in your eyes, have lost that sacred title; I offer you them, however, such as you could wish to find them, ready to exert their utmost efforts in defence of the country. This point of Louisiana which I occupy is of great importance in the present crisis. I tender my services to defend it, and the only reward I ask is, that a stop be put to the prosecutions against me and my adherents, by an act of oblivion for all that has been done hitherto. I am the stray sheep wishing to return to the sheepfold. If you are thoroughly acquainted

with the nature of my offences, I should appear to you much less guilty, and still worthy to discharge the duties of a good citizen. I have never sailed under any flag but that of the republic of Carthagena, and my vessels are perfectly regular in that respect. If I could have brought my lawful prizes into the ports of this State, I should not have employed the illicit means that have caused me to be proscribed. Should your answer not be favorable to my ardent desires, I declare to you that I will instantly leave the country to avoid the imputation of having coöperated towards an invasion on that point, which cannot fail to take place, and to rest secure in the acquittal of my own conscience."

Upon the receipt of these letters, Governor Claiborne convoked a council of the principal officers of the army, navy and militia, then in New Orleans, to whom he submitted the letters, asking their decision on these two questions: 1st. Whether the letters were genuine? 2d. Whether it was proper that the governor should hold intercourse or enter into any correspondence with Mr. Lafitte and his associates? To each of these questions a negative answer was given, Major General Villéré alone dissenting—this officer being (as well as the governor, who, presiding in the council, could not give his opinion,) not only satisfied as to the authenticity of the letters of the British officers, but believing that the Barataarians might be employed in a very effective manner in case of an invasion. The only result of this council was to hasten the steps, which had been previously commenced, to fit out an expedition to Barataria to break up Lafitte's establishment. In the meantime, the two weeks asked for by Lafitte to consider the British proposal having expired, Captain Lockyer appeared off Grand Terre, and hovered around the inlet several days, anxiously awaiting the approach of Lafitte. At last, his patience being exhausted and mistrusting the intentions of the Barataarians, he retired. It was about this time that the spirit of Lafitte was sorely tried by the intelligence that the constituted authorities whom he had supplied with such valuable information, instead of appreciating his generour exertions in behalf of his country, were actually equipping an expedition to destroy his establishment. This was truly an ungrateful return for services which may now be justly estimated. Nor is it satisfactorily shown that mercenary motives did not mingle with those which prompted some of the parties engaged in this expedition. The rich plunder of the "Pirate's Retreat," the valuable fleet of small coasting vessels that ride in the Bay of Barataria, the exagerated stories of a vast amount of treasure, heaped up in glittering

piles, in dark mysterious caves, of chests of Spanish doubloons, buried in the sand, contribute to inflame the imagination and avarice of some of the individuals who were active in getting up this expedition.

A naval and land force was organized under Commodore Patterson and Colonel Ross, which proceeded to Barataria, and with a pompous display of military power entered the bay. The Baratarians at first thought of resisting with all their means, which were considerable. They collected on the beach armed, their cannon were placed in position, and matches were lighted, when, lo! to their amazement and dismay, the stars and stripes became visible through the mist.

Against the power which that banner proclaimed they were unwilling to lift their hands. They then surrendered, a few escaping up the bayou in small boats. Lafitte, conformably to his pledge, on hearing of the expedition, had gone to the German coast—as it is called—above New Orleans. Commodore Patterson seized all the vessels of the Baratarians, and, filling them and his own with rich goods found on the island, returned to New Orleans loaded with spoils. The Baratarians who were captured were ironed and committed to the calaboose. The vessels, money and stores taken in this expedition were claimed as lawful prizes by Commodore Patterson and Colonel Ross. Out of this claim grew a protracted suit, which elicited the foregoing facts, and resulted in establishing the innocence of Lafitte of all other offences but those of privateering, or employing persons to privateer, against the commerce of Spain, under commission from the republic of Columbia, and bringing his prizes to the United States to be disposed of, contrary to the provisions of the neutrality act.

The charge of piracy against Lafitte, or even against the men of the association, of which he was the chief, remains to this day unsupported by a single particle of direct and positive testimony. All that ever was adduced against them, of a circumstantial or inferential character, was a discovery among the goods taken at Barataria of some jewelry, which was identified as that of a Creole lady, who had sailed from New Orleans seven years before, and was never heard of afterwards.

Considering the many ways in which such property might have fallen into the hands of the Baratarians, it would not be just to rest so serious a charge against them on this single fact. It is not at all improbable—though no facts of that character came to light—that among so many desperate cha-

racters attached to the Baratarian organization, there were not a few who would, if the temptation were presented, "scuttle ship or cut a throat" to advance their ends, increase their gains, or gratify a natural bloodthirstiness.

But such deeds cannot be associated with the name of Jean Lafitte, save in the idle fictions by which the taste of the youth of the country is vitiated, and history outraged and perverted. That he was more of a patriot than a pirate, that he rendered services of immense benefit to his adopted country, and should be held in respect and honor, rather than defamed and calumniated, will, we think, abundantly appear.

TEXAS PUBLIC DEBT.

The following statement of the character and amount of the public debt of Texas, prepared by the comptroller, Hon. James B. Shaw, will be useful for reference at present and for some time to come, while the subject of the adjustment and final settlement of all claims against the late republic of Texas is under consideration. The reader will here see, at a glance, what class of claims is benefitted by the settlement proposed in the late act of Congress. It will be seen that, by this arrangement, one class of creditors will receive $118,900 less than Texas already offers, while the remainder obtain $3,433,263 more. A large amount which Texas proposes to pay at par is scaled to 77¼ cents by the act of Congress.

STATEMENT of that portion of the debt of the late republic of Texas, which, according to the decision of the Secretary of the Treasury and the opinion of the Attorney General of the United States, is secured by the pledge of impost duties, exhibiting the rate of adjustment established by Texas, and the rate proposed by the recent act of the United States Congress; also, the excess and decrease of each mode of payment compared with the other, and the dividend in the dollar realized by each mode of adjustment.

[The interest on the liabilities, issued to bear interest, but on which no interest has been paid, has been calculated from their respective dates of issue up to the 1st of July, 1850, and on those on which interest payments have been made, the interest is calculated to same date, from the last payment of interest. The interest on the first and second issue of Treasury notes is only computed to January 1, 1841, as it is considered, under laws of Texas, that interest ceased to run after that date on these classes of liabilities. Of the 8 and

10 per cent. bonds, entered in the above statement, the State has paid $298,065 35 principal and interest, which sum, under the recent act of Congress, would be refunded to the State.]

CHARACTER OF CLAIM.

1. 10 per cent. bonds, issued under the funding act of 7th June, 1837.
2. 10 " " " " (special.)
3. 10 " " five million loan acts, for naval vessels.
4. 10 " " " loan from U. S. Bank.
5. 10 " " funding act, 5th February, 1840.
6. 8 " " " "
7. 8 " treasury bonds " "
8. 10 " treasury notes act of 7th June, 1837, (1st issue.)
9. 10 " " " (2d issue.)
10. Treasury notes (without interest) act of January 19, 1839, (3d issue.)

STATEMENT.

Number.	Total ostensible principal and interest of each class.	Total par value of principal and interest of each class as adjusted under the laws of Texas.	Pro rata amounts proposed by the act of Congress.	Excess of the Texas adjustment over that of the act of Congress.	Excess of the pro rata adjustment over that of Texas.	Dividend in the dollar realized by the Texas adjustment.	Dividend in the dollar realized by the pro rata adjustment.
1	$1,621,103 30	1,184,772 36	1,252,683 58	.....	117,911 22	0 70	77 27-100 c.
2	27,896 64	27,896 44	21,556 52	6,339 92	.....	1 00	do.
3	1,622,404 70	811,202 35	1,253,689 22	.....	442,486 87	0 50	do.
4	960,498 00	840,000 00	742,210 75	97,789 25	.....	0 87 44-100	do.
5	1,624,400 00	487,320 00	1,255,232 30	.....	767,912 30	0 30	do.
6	46,596 26	13,978 87	36,006 20	.....	22,027 33	0 30	do.
7	1,417,680 00	283,536 00	1,095,491 60	.....	811,955 60	0 20	do.
8	65,000 00	65,000 00	50,227 80	14,772 20	.....	1 00	do.
9	444,000 00	222,000 00	343,094 25	.....	121,094 25	0 50	do.
10	2,199,728 64	549,932 16	1,699,807 78	.....	1,149,875 62	0 25	do.
	10,029,307 60	4,485,638 18	7,750,000 00	118,901 37	3,433,263 19		

NOTE.—The first column of figures, in each table, 1 to 10, shows that the description applies to the corresponding figures.

THE NEW COURT OF CLAIMS AT WASHINGTON.

We publish as valuable to our subscribers in every part of the Union, the following rules adopted by the new court of claims which are to govern in all cases before that tribunal. It will be remembered that this court has original cognizance of all claims against the government which hitherto have been sent up to Congress. The editor of the Review intending to practice in the court, and to have his residence in Washington a large part of each year, feels that he will be doing service to others as well as to himself by inserting these rules:

Rules of practice of the Court of Claims, adopted May 17, 1855.

1. Every claim shall be stated in a printed petition addressed to the court, and signed by the claimant or his counsel.

2. The petition must set forth a full statement of the claim, and of the action thereon in Congress or by any of the departments, if such action has been had, specifying also what person or persons are owners thereof, or interested therein, and when and upon what consideration such person or persons became so interested. If the claim is founded upon any law of Congress, or upon any regulation of an executive department, the act of Congress and the section thereof upon which the claimant relies must be stated, and the particular regulation of the department must be specified. If the claim is founded upon any express contract with the government of the United States, such contract must be set forth in the petition, and, if it be in writing, in the words of the contract. If it be founded upon any implied contract, the circumstances upon which the claimant relies as tending to prove a contract must be specified. There must be annexed to the petition an affidavit of the claimant that the facts stated in the petition are true to the best of his knowledge and belief.

3. Eace claim shall be entered on the docket on filing the petition, or, in cases referred by either house of Congress, on filing a petition and the papers in the case referred.

4. The claimant, when he files his petition, shall deliver to the clerk ten copies thereof for the use of the judges and the solicitor.

5. If the solicitor shall be of opinion that the petition does not state a proper case for the action of the court, it shall be his duty, after the filing of the petition, to furnish the clerk ten printed copies of his objections for the judges and the claimant.

6. There shall be no other pleadings than those above stated.

7. If the petition be adjudged to be sufficient, the court will authorize the taking of testimony in the case.

8. The court will appoint permanent commissioners for the taking of testimony, and special commissioners as circumstances may require.

Every permanent commissioner shall take an oath before he enters upon his duties that he will faithfully discharge them so long as his commisssion remains in force; and every special commissioner shall take an oath faithfully to discharge his duties.

The form of a commission to a permanent commissioner shall be as follows:

COURT OF CLAIMS:

To ——, of ——, in the county of ——, and State of ——.

——, Esquire.

You are hereby appointed a commissioner for the State of —— to take the testimony of such wittnesses as may come before you, to be used in the investigation of such claims as may be presented to this court against the United States. In the performance of this duty you will be guided by the rules of this court, and in making your certificate of the taking of depositions, you will follow the form prescribed by the 15th rule. You will take no deposition unless by the consent of the parties, until it has shown to you, by the return upon the original notice, that the adverse party has been duly notified; and, if he does not appear, you will fix the original notice to your certificate, and return it therewith for the information of the court.

—— ——, Clerk.

When the special commissions are issued, such variations from the above form as may be necessary will be made.

9. The form of a subpœna shall be as follows:

COURT OF CLAIMS:

To —— ——.

You are hereby commanded to appear before —— ——, commissioner appointed by this court to take depositions, on the —— day of ——, A. D. 185 , at —— o'clock in the —— noon, then and there to testify in the case of —— —— against the United States, now pending in this court. Fail not of appearance, at your peril. Dated this —— day of ——, A. D. 185 .

—— ——, Clerk.

10. The party proposing to take depositions shall cause fifteen days' notice thereof to be given to the solicitor or to the claimant or his counsel, as the case may be. The notice must be in writing, and must state the names of the commissioner and of the witnesses and the claimant, and the day of the month, the

hour, and the place of taking the deposition, and must be subscribed by the solicitor or his agent, or by the claimant or his attorney of record. When the claimant proposes to take a deposition, and the witness resides more than five hundred miles from Washington, or where the solicitor proposes to take the deposition, and the witness resides more than five hundred miles from the claimant or his counsel, one day's further notice shall be given for every additional twenty miles.

11. The fees of witnesses for travel and attendance shall be such as are authorized by the laws of the State or Territory where the witness resides, and shall be paid by the party at whose instance the witnesses appear.

12. If the witness, having been duly summoned and his fees tendered him, shall fail or refuse to appear and testify before any commissioner, a rule upon him shall be issued, on motion, to show cause why a fine should not be imposed upon him; and if he fail to show sufficient cause, he shall be fined not exceeding one hundred dollars.

13. All the witnesses shall be sworn or affirmed, before any questions are put to them, to tell the truth, the whole truth, and nothing but the truth, relative to the cause in which they are to testify, and each witness shall then state his name, his occupation, his age, his place of residence for the past year; whether he has any interest, direct or indirect, in the claim which is the subject of inquiry; and whether, and in what degree, he is related to the claimant. At the conclusion of the deposition, the witness shall state whether he knows of any other matter relative to the claim in question; and if he do, he shall state it.

14. All evidence must be in writing, and all depositions must be taken by questions, each of which is to be written down by the commissioner in the body of the deposition, and then proposed by the commissioner to the witness, and the answers thereto are to be written down by the commissioner in the presence of the witness. But the interrogatories and cross-interrogatories may be administered under the supervision of the court, whenever in their opinion justice and expediency require, and each deposition must be signed by the deponent in the presence of the commissioner.

15. The commissioner's return shall be as follows:

State of ——, county of ——, *ss:*

On this —— day of ——, A. D. ——, personally came —— ————, the witness within named, and after having been first sworn to tell the truth, the whole truth, and nothing but the truth, the questions contained in the within deposition were written down by the commissioner, and then proposed by him to the witness, and the answers thereto were written down by the commissioner in the presence of the witness, who then subscribed the deposition in the presence of the commissioner. The deposition of —— ————, taken at the request of —— ————, to be used in the investigation of a claim against the United States now pending in the court of claims, in the name of —— ————. The adverse party was notified, did attend, and did object.

—— ————, Commissioner.

Fees of witness, ——.
Travel, ——.
Attendance, ——.
Commissioner's fees, ——.

16. The commissioner shall enclose the commission, depositions, and exhibits, if any, in a packet under his seal, and direct the same to the clerk at Washington, and deposit the packet in the post office.

17. The commissioner shall not be obliged to certify and forward the deposition taken for either party until his fees for the taking of the same and the postage shall have been paid or tendered to him by the party at whose instance the commission issued; which fees shall be five dollars a day, and twenty cents for every hundred words contained in the deposition.

18. No objection to a depositton will be considered as waived because such objection was not taken before the commissioner.

19. No counsel will be permitted to practise in the court unless he is a man of good moral character, and has been admitted or licensed to practise in the Supreme Court of the United States, or in the highest court of the District of Columbia, or in the highest court of some State or Territory, of which admission the certificate of the clerk of such court or such license will be the only evidence; and before admission such counsel shall be sworn to support the Constitution of

the United states, and that his conduct, as counsel, shall be upright and according to law. But any claimant may appear in person and manage his own cause.

20. When the claimant's case is prepared, he shall notify the solicitor thereof, furnishing him at the same time with a printed copy of his brief. The solicitor, within a reasonable time thereafter, shall furnish the opposite counsel with a printed copy of his brief, and file copies of both briefs with the clerk. When the briefs are thus filed, the clerk shall enter the case on the trial docket. At least three days before any case will be called for argument such printed briefs shall be furnished to each of the judges, and contain all the positions and authorities relied on. No *viva voce* arguments on behalf of either party will be permitted to continue more than two hours, nor will counsel be permitted to take other grounds or to refer to other authorities than those stated in the briefs. The cases will be called for argument or submission in the order in which they shall be thus prepared.

21. In the computation of time mentioned in these rules, all Sundays, and also the day of the service of any notice, and the day on which a party is required to appear, or on which any act is required to be done, shall be excluded.

22. No paper filed in a cause shall be taken from the clerk's office, except by one of the judges, without permission of the court, and by leaving a certified copy with the clerk.

23. If the claimant die, pending the suit, his proper representatives may, on motion, be admitted to prosecute the claim.

A true copy from record:

SAMUEL H. HUNTINGTON, *Chief Clerk.*

RELIGIOUS HISTORY AND STATISTICS OF THE UNITED STATES.*

I. The Protestant Episcopal Church.—The oldest branch of the Protestant Church in the United States is the Protestant Episcopal. Its history commences with the planting of the colony of Virginia, in the year 1607. For a very long period this church labored uuder many disadvantages—the difficulty of obtaining ministers from England, where all had to be ordained. Another and very serious difficulty arose from the disputes which occurred in relation to the manner of their support. And, to complete the catalogue of hindrances, at the commencement of the revolution, a large number of the ministers of this body, being Englishmen, felt constrained, by their views of duty, to return to the mother country. It was not till years after the revolution that the real prosperity of this church commenced. From the most authentic accounts which I have been able to find, I think that there were, in the year 1800, 320 churches, 16,000 communicants, 260 ministers, with 7 bishops. In 1819 there were 17 bishops, about 500 churches, and 25,000 members. In 1850, there were 28 bishops, 3 missionary bishops, 1,504 ministers, 1,550 churches, and about 73,000 members. During the first half of this century, the Episcopal church in the United States has, therefore, more than quintupled its clergy and churches, and nearly quintupled its members. The population of the United States has

* By Dr. Baird, author of Religion in America.

increased, during the same period, something less than four-fold and a half, it being, relatively, at the epochs of 1850 and 1800, as 439 6-10ths to 100.

II. The Congregational Churches.—The Congregational branch of the one true Church of Christ may be taken next; for though the Reformed Dutch Church may have had some preachers on the ground before 1620, it is not certain that there were any churches of this body before 1624. The increase of this body has been steady, almost from the first. I have no means of knowing what were its statistics in the year 1800. But in the year 1850 there were 1,971 churches, of which nearly 1,400 were in the six New England States, and the rest in the other States, chiefly Ohio, Illinois, Michigan, Wisconsin, and Iowa. The number of ministers was 1,687, and of the communicants, or members, 197,196. In this statement no churches are included but those which are now called Congregational in America. The Congregational body of churches has not increased as fast as the other great communions, and for the simple reason that it was for nearly two hundred years confined to the six New England States. The emigrants from those States, who had been brought up in the principles of the Congregational system, usually joined the Presbyterian churches in the middle, southern, and western States. This practice still continues, although not so much as formerly. Within the last fifteen or twenty years a large number of Congregational churches has been formed in the States of New York, Ohio, Michigan, Wisconsin, and Iowa, and a few in others, composed for the most part of people from New England. Had the emigrants from New England and their children dispersed over the States and Territories, and who are believed to be almost if not quite as numerous as the actual inhabitants of the land of their origin, all cleaved to its ecclesiastical polity, and every where organized churches on that basis, the Congregational churches in the United States would have been more than 3,000 in number, instead of 1,971, at this day.

III. The Baptist Churches.—The Baptist branch of the church of Christ comes next in order of time.

For a long period, the Baptist ministers encountered much opposition, owing to the intolerance which prevailed both north and south, an intolerance which was a vice of the age. They often suffered imprisonment in Virginia, from the hands of the civil government, and they were banished from Massachusetts, and compelled to found the colony of Rhode Island. At length, however, better views prevailed in both portions of the country. In Pennsylvania and New Jersey

they never experienced opposition, so far as I know. In the year 1791, there were 1,150 churches, 891 ministers, and 65,345 members. In 1850, what are called the "Regular," or "Associated Baptist churches were believed to be 10,441, the number of ordained ministers 6,049, and that of the members 754,652. If we add to these the Seventh-day Baptists, (Sabbatarians,) with their 60 churches, 46 ministers, and 7,000 members; the Free-will Baptists (who are Arminian in their theological views,) 1,154 churches, 823 ordained ministers, 49,215 members; the Six Principal Baptists, and one or two other small branches, who have about 200 churches, 100 ministers, and 11,000 members; and the "Disciples of Christ," or "Reformers," as they call themselves, a large body, embracing, in 1850, about 1,600 churches, 1,000 ministers, and 127 000 members, who have adopted the sentiments of the Rev. Dr. Alexander Campbell, which have been considered too speculative and cold, and not sufficiently operative to the renovation of the heart and life,* we shall have an aggregate of 13,455 churches, 8,018 ministers, and 948,867 members. This is an immense increase since the year 1791—sixty years ago. In the year 1750, one hundred years ago, there were only 58 Baptist churches in the whole of what is now the United States; and in the year 1768, there were but 137. It appears that in sixty years the Baptist churches have increased tenfold, their ministers ninefold, and their members more than thirteenfold!

IV. The Presbyterian Churches.—The next of the large Christian bodies which arose in the United States was the Presbyterian. The first ministers of that body were from Scotland and the North of Ireland, and were joined by ministers from New England, who came into the middle and southern States, where Presbyterianism first gained a foothold. In the year 1705 a presbytery, consisting of seven ministers, was formed; from this beginning the body has steadily grown, until it now ranks among the most numerous and powerful of the land. In the year 1800, it is believed, the number of ministers of what is now called the Presbyterian church, was about 300, churches 500, and communicants 40,000. This is, at all events, as exact as we can make the statement, and it cannot be far from the truth. The two

*I am happy to say that from various quarters I have received information, that spiritual life is increasing in this branch of the Baptist body. This is indeed a cheering fact, one that, perhaps, should have been expected. Dr. Campbell thought he saw the truth exposed to danger from a certain quarter, and it was quite possible for him, in these circumstances, to go to the other extreme. But it was natural for a proper equilibrium, or something like it, to be reached in due time.

great branches in which it now appears, for a division took place in the year 1838, stand thus: The Old School General Assembly has 23 synods, 134 presbyteries, 2,027 ministers, 618 licentiates and students, 2,675 churches, 210,306 members. The New School Assembly has 21 synods, 104 presbyteries, 1,489 ministers, 204 students (in theological schools only) and licentiates, 1,579 churches, and 140,060 communicants. Taken together, the two branches of the Presbyterian church name 44 synods, 238 presbyteries, 3,516 ministers, 822 licentiates and students, 4,254 churches, and 350,366 communicants. From this it appears that this body increased nearly twelvefold so far as the minstry is concerned, eight and a half fold as to the churches, and nearly ninefold as regards the members. But, if we add the smaller branches, none of which amounted to much in the year 1800, and the largest of which did not exist at all, the increase of the Presbyterian body becomes still more striking. They are as follows: 1. The Associate Presbyterian church, which had in 1850, 1 synod, 16 presbyteries, 120 ministers, 214 churches, and 18,000 communicants. 2. The Associate Reformed Presbyterian church, with 4 synods, 20 presbyteries, 219 ministers, 332 churches, and 26,340 members. 3. The Reformed Presbyterian church, with 2 synods, 7 presbyteries, about 80 ordained ministers, 100 organized churches, and 12,000 communicants. These three bodies have at least 160 students and licentiates. 4. Reformed Dutch church, which is only Dutch in name at present, for the English is used in all their pulpits, and spoken by all their people. This body had, in 1784, only 82 churches, and 30 ministers. In 1850 it had a general synod, 2 particular synods, 24 classes (or presbyteries,) 293 ministers, 292 churches, and 33,553 communicants. It had also 32 students in theology. 5. The Cumberland Presbyterian church. This body arose in 1810, in the State of Kentucky. In polity it is Presbyterian, with the addition of the itinerating system of the Methodist church. In doctrine it holds a sort of medium ground between Calvinism and Arminianism. * It has a General Assembly, 12 synods, 45 presbyteries, 350 ministers, 480 churches, and more than 50,000 members. This body is most numerous in the south-western and western States. It has but few churches eastward of the Alleghany mountains.

From this it appears the Presbyterian family of churches, speaking the English language and having a British origin, except the Dutch Reformed, consists of 4 general assemblies,

* It is rather a *mixture* than a *medium*, for whilst they reject the doctrine of *Election*, they hold to that of the *Perseverance of the Saints*.

65 synods, 360 presbyteries, 4,578 ministers, 1,014 students and licentiates, 5,672 churches, and 490,259 communicats. And almost all this is the wrowth of fifty years, or the era from 1800 to 1850. During that period the Presbyterian Church may be said to have increased nearly elevenfold.

V. THE METHODIST CHURCHES.—The last in order of time, of the larger religious bodies mainly of Anglo-American origin, that arose in the United States was the Methodist Episcopal Church. It was not till the year 1784 that this church was organized—under the superintendence of the Rev. Messrs. Coke and Asbury. Up to that time, those who followed the doctrines and measures of Wesley remained in connexion with the Protestant Episcopal Church. At the date of its organization the new body had 83 ministers and 14,986 members. In the year 1800 it had 40,000 members. Its subsequent increase has been immense. It now spreads over all the country, and its "conferences," "districts," and "circuits," cover the whole land. Its itinerating system is admirably adapted to the extent and wants of so vast and so new a field. In the year 1844, a division took place in this body, occasioned by the subject of slavery. In the year 1850, the northern branch, called the "Methodist Episcopal Church," had 4,004 ministers on its regular service, and 666,310 members. The "Methodist Episcopal Church South," had 1,642 ministers, and 504,520 members; making in all, 5,646 regular ministers, or those on the circuit, besides a large number of local ministers, and 1,170,830 members. There are several small Methodist bodies. 1. In ths year 1828 there was a secession from the Methodist Episcopal Church, on account mainly of the exclusion of the lay representatives from the annual and general conferences; and the Protestant Methodist Church was organized. This body had in 1850 a general conference, 22 annual conferences, 1,200 travelling and local preachers, and 62,000 communicants. 2. There is what is called the Wesleyan Methodist Church, which was another secession, on the ground of slavery and the episcopacy, in the year 1842. It has several conferences, and 20,000 members. 3. There are some Primitive Methodists in America, but their societies are neither large nor numerous. 4. There is a small Christian body of colored people, called the African Methodist Church, which has about 20 circuits, 30 preachers, and nearly 3,000 members. And, 5. There are some 20 congregations of Welsh Calvinistic Methodists. By combining all the churches above mentioned, it will be found that there are quite 6,000 regular preachers, at least 8,000 local preachers, and more than a million and a quarter of mem-

bers! There is reason to believe that the membership of this communion has increased much more than six times as fast as the population of the country has done since the year 1784!

VI. The German Churches.—We come now to a group of churches of continental origin, and which still employ more or less the German language. Hitherto we have been speaking of churches which have been founded by emigrants from the British Isles, and which speak the English language, and employ it, with few exceptions, in their public services. These exceptions are some Welsh churches—probably not short of a hundred in all—which are mostly Congregational, Methodist, or Presbyterian; a few Gaelic churches, that are Presbyterian; some Swedish and Norwegian churches, chiefly Lutheran; and some German churches, which belong to the Methodist, Presbyterian, Dutch Reformed, Baptist, &c. Whilst all the earlier emigrants from other parts of the continent—such as the Dutch, the Huguenots, the Waldenses, the Swedes, &c.—have long since lost their languages and become merged in the Anglo-American population, those from Germany being much more numerous, and constantly sustained in the use of their maternal tongue by the never-ceasing flow of the immigration from Germany, have retained, in many places, their old language, and employ it in their religious services. 1. The largest of these bodies is the Lutheran, which, in 1850, consisted of a general synod, 19 district synods, 663 ministers, 1,603 congregations, and 163,000 members. The increase of this church since the year 1800 has been very great, but I have no means of measuring it in a statistical manner. Not only has its numbers greatly augmented, but there has been a great resuscitation of true piety and spiritual life. 2. The next German communion, in point of size and influence, is the German Reformed Church. This body, like the Lutheran, has received great enlargement in the United States within the present century, though both existed long before in portions of Pennsylvania, Maryland, and Virginia. It had last year about 260 ministers, 600 congregations, and 70,000 communicants. This body has been troubled of late years by some speculations, which have been pronounced to be kindred to those of Dr. Pusey, but it contains many excellent men, and is rapidly increasing in numbers. 3. The United Brethren in Christ. This denomination arose in the latter part of the last century, from the union of some excellent people who had belonged to the Reformed, Lutheran, and Mennonist Churches. Their first conference was held in the year 1800.

They had last year nine annual conferences, 4 bishops, or superintendents, 250 itinerant ministers, 350 local preachers, 1,800 churches and other places of worship, and about 67,000 communicants. Their doctrines and modes of worship are essentially the same as those of the Methodist Episcopal Church. 4. The Evangical Association, founded in 1800. This is another sect of German Methodist, and is similar to the Methodist Episcopal Church in doctrine and church polity. It has 2 bishops, a general conference, 4 annual conferences, 112 travelling ministers, 200 local preachers, about 900 places of preaching, and 17,000 communicants. 5. The United Brethren, or "Moravian Brethren," as they are often called. They have several settlements, chiefly in Pennsylvania, 1 bishop, 23 churches, 27 ministers, and 3,000 communicants. 6. The Evangelical Church, of quite recent origin, an offshoot of the Evangelical Church of Germany. They have a synod of some 25 or 30 churches in Missouri, and are increasing. 7. The Mennonists, a small body, who are often classed with the Baptists; but they rather pour than either sprinkle or immerse. The worship chiefly in private houses, and their congregations, estimated at 400, are small. They have about 240 ministers. They can hardly have more than 30,000 communicants. 8. The Tunkers or Dunkers. A small sect of German Baptists that appeared in America more than 130 years ago. They retain some customs which are quite oriental and primitive, such as washing the feet and giving the kiss of charity. But little is known of their numbers, as they publish no statistics. It is believed that they have as many as 250 preachers, and 8,000 or 10,000 members. They are generally farmers, and are most numerous in Pennsylvania and Virginia. They have lately had a great religious meeting in the latter, to which they came in great numbers and from afar in their wagons. They are a simple-hearted, industrious, quiet, worthy people. 9. The Winebrennerians, a growing sect in Pennsylvania chiefly, of good people, founded by Mr. Winebrenner, of Harrisburg, in that State; I know not their numbers. 10, and lastly, there is a small German, Seventh-day Baptist Church, much attached to monastic life, but of their statistics I have nothing that can be depended on. They are not believed to exceed a few hundred in number, and their ministers may be as many as ten or twelve. It appears from this statement that there are no less than ten German branches of the Protestant Church in America, almost all of them offshoots of German bodies in Europe, and that they have about 1,827 regular ministers,

550 local preachers, 5,356 congregations, many of which are very small, and 333,000 members.

VII. THE FRIENDS.—It only remains that I speak of the Society of Friends, whose "meetings," or congregations, are estimated at about 500, of which 300 are supposed to be orthodox, and 200 "Hicksite," from one Elias Hicks, who was a celebrated preacher in that body some twenty years since, and taught doctrines of a very deistical character, which, in process of time, led to a complete disruption of the body. Whilst it is not doubted that there are many excellent and truly pious people in the orthodox portion of this denomination, it is thought that the society is not increasing, at least, not perceptibly. Many of the Hicksite branch, especially of the young people are falling into infidelity, in which some will probably continue to wander; whilst many, it is believed, will ultimately be merged in the other Protestant churches.

SUMMARY.—The result of all the investigation which we have been able to bestow on the subject is, that there were last year in the United States, in the several branches of the Protestant Church, which may be termed Evangelical—first, 23,614 ministers (besides the "local preachers" of the several branches of the Methodist Churches, who are not less than 9,000 in number;) second, 58,304 congregations, or assemblies; third, 3,292,322 communicants. Given in a condensed tabular view they stand thus:—

Denominations.	Ministers.	Congregations.	Members of churches.
Protestant Episcopal church	1,504	1,550	73,000
Congregational body	1,687	1,971	197,196
Baptist body	8,018	13,455	948,867
Presbyterian body	4,578	5,672	490,259
Methodist body	6,000	30,000	1,250,000
German churches	1,827	5,356	333,000
Friends or Quakers	.....	300	.....
Total	23,614	58,304	3,292,322

It is very difficult to ascertain the exact number of those who are preaching the Gospel. We have given the number reported, on the best authority that we can find in each religious body. And although it is certain that a considerable deduction should be made from the numbers given, for superannuated ministers, professors and teachers, missionaries, &c., yet all this is far more than made up in the great number of licenciates, or young ministers, who are not settled,

many not having finished their theological studies—of whom there are not less than two or three thousand. Besides all this, there are at least 9,000 local preachers in the several Methodist Churches, all of whom do less or more in the way of preaching and holding meetings for prayer, conducting Bible classes, superintending Sabbath-schools, &c., &c., as well as various forms of pastoral labor. This would make the number of Evangelical preachers more than 32,000.

There has been no portion of this investigation attended with more difficulty than that relating to the number of individual churches. I have found it impossible to attain entire accuracy. The number given is rather that of the congregations or assemblies. Large as it is, it is certainly much under the mark. The several branches of the Methodist church, and also the Cumberland Presbyterians, have their circuits, each comprehending, for the most part, several places for worship. They may be church edifices, school-houses, court-houses, or private houses. If all the places where the Gospel is occasionally preached by pastors and others, but where there is no church organized, because not necessary, were to be added to those in which a church or body of believers is organized, the entire number of places where the gospel is preached would, it is believed, be found to exceed one hundred thousand!

There are various ways of measuring the progress of religion in a country. One of these is statistical, and this we may legitimately apply, at this point, to the country of which we are speaking. It is impossible to ascertain with entire precision the number of Evangelical ministers, churches, and communicants in the United States at the epoch of the Revolution, seventy-five years ago.* We cannot ascertain the number for the year 1800 with strict accuracy; but we can ascer-

* In another work—RELIGION IN AMERICA, (Book III. chap. 1.)—I have stated that, after much inquiry, I had come to the conclusion that there were in the year 1775, fourteen hundred and forty-one ministers, and nineteen hundred and forty churches, in the United States. This statement included twenty-six Roman Catholic priests and fifty-two churches. According to this estimation, there was one minister, on an average, for about 2,429 souls—supposing the population of the country to have been 3,500,000 at that epoch, which is probably not far from the truth.

If we suppose the number of ministers of the Evangelical churches alone to have been 23,614 in the year 1850, and the population 23,250,000, then we shall find that there was one minister for 984 individuals! Making all proper allowance for the increase of ministers and churches from 1775 to 1800—and that increase was not very great, in fact the number of Episcopal ministers was less in the south in the latter of these epochs than of the former—we come to the conclusion that the number of ministers of the Evangelical churches alone, and of the churches and members too, we doubt not, was twice as great in proportion to the population in 1850 as it was in 1800. If we include the NON-EVANGELICAL bodies, this increase becomes still more astonishing.

tain enough, and I have already given the data, to show, that while the population of the United States increased something less than fourfold and a half, from 1800 to 1850, the number of Evangelical ministers of the Gospel, churches, and members of the churches, has increased nearly, if not quite, tenfold! As to other modes of measuring the advance of the truth in the United States I shall speak of them presently.

VIII. THE SWEDENBORGIANS.—Of this well known sect there are about 40 small churches, 35 ministers, and 10,000 people.

IX. THE UNITARIANS, chiefly in New England. They count about 300 churches, 250 ministers, and 30,000 members.

X. THE CHRISTIANS, or *Christ*-ians, as they are commonly called. They were at the outset a warm-hearted, zealous, rather fanatical sect, which arose at various points almost simultaneously, some forty years ago and more. These deny the Trinity, but hold to salvation by Christ, "by whose sufferings, death, and resurrection," they say, "a way has been provided by which sinners may obtain salvation." They report 1,500 churches, as many ministers, and 150,000 members.

XI. There are some German Lutheran churches in Eastern Pennslyvania, and in other parts, that are Socinian, but I have not been able to ascertain their number. A portion of the Friends, or Quakers, must be placed in this same category.

XII. THE UNIVERSALISTS.—This is a sect of English origin. Its first apostles and propagators were Murray and Winchester. They were serious men, and held the doctrine of Restoration. At present there are very few among them who believe in any future punishment. They have 540 preachers, 550 churches, and 875 societies.

XIII. THE ROMAN CATHOLICS.—This body had, in 1850, 4 archbishops, 30 bishops. 1,073 churches, 1,081 priests, and a population of 1,500,000; according to the Roman Catholic Almanac.

*Church Value and Accommodation for the several great Sections.**

Geographical divisions.	Churches.	Church Property.	Average value.	Accommodation for persons.	Average accommodation for persons.	Ratio of accommodation.	Total population.
New England	4,612	$19,363,584	$4,198	1,895,285	411	69.47	2,728,116
Middle States	9,714	41,187,657	4,235	4,306,483	443	65.00	6,624,988
Southern States	7,394	7,373,634	997	2,571,412	348	65.05	3,952,887
Southwestern States	5,415	5,182,074	957	1,596,750	295	48.08	3,321,117
Northwestern States	10,926	18,899,122	1,272	3,859,926	358	60.41	6,379,923
California & Territories.	122	490,320	4,019	46,283	379	25.03	184,895

* From Compendium of United States Census, 1850.

THE COUNTIES OF THE UNITED STATES.

States and Territories.	Counties.	Unchanged between 1840 and 1850.	In which females greatly preponderate.	In which no free col.	In which no slaves.	In which slaves preponderate.	In which native & foreign are nearly eq'al	In which foreigners greatly preponderate.	Containing few or no foreigners.	Counties having the largest per cent. of foreign born.
Alabama	52	45	....	5	....	15	....	....	17	Mobile, 27.05.
Arkansas	51	33	....	9	....	2	....	....	37	Pulaski, 7.42.
California	27	.....	....	8	27	....	1	....	6	Tuolumne, 50.77.
Columbia, Dist. of	1	1	....	....	....	....	....	....	....	Washington, 10.25.
Connecticut	8	8	6	....	8	....	....	....	....	New Haven, 14.48; Hartford, 14.40.
Delaware	3	3	1	....	....	....	....	....	....	New Castle, 11.87.
Florida	28	12	2	5	....	4	1	....	13	Munroe, 48.87.
Georgia	95	89	14	8	....	31	....	....	46	Chatham, 23.03.
Illinois	99	70	....	8	99	....	1	....	3	Cook, 50.39.
Indiana	91	85	....	3	91	....	....	....	1	Vandenburg, 35.56.
Iowa	49	17	....	25	....	....	1	....	14	Dubuque, 39.67.
Kentucky	100	74	....	1	....	1	....	....	39	Jefferson, 32.26.
Louisiana	47	29	....	5	....	29	1	....	4	Orleans, 50.52.
Maine	13	13	2	....	13	....	....	....	....	Washington, 19.84.
Maryland	20	20	1	....	....	2	....	....	5	Baltimore, 19.37.
Massachusetts	14	14	6	....	14	....	....	....	....	Suffolk, 34.34.
Michigan	43	26	....	9	43	....	2	....	1	Wayne, 33.93.
Mississippi	50	56	....	9	....	20	....	....	21	Harrison, 20.82.
Missouri	100	60	....	22	....	....	....	1	43	St. Louis, 53.50.
New Hampshire	10	7	4	....	10	....	....	....	....	Cheshire, 7.77.
New Jersey	20	16	2	....	7	....	....	....	....	Hudson, 36.01.
New York	59	56	4	....	59	....	3	....	....	New York, 46.74.
North Carolina	79	57	1	....	....	3	....	....	50	Cumberland, 2.76.
Ohio	87	57	....	2	87	....	1	....	....	Hamilton, 41.74.
Pennsylvania	63	40	1	....	63	....	....	....	....	Allegheny, 31.39; Philadelphia, 28.84.
Rhode Island	5	5	3	....	5	....	....	....	....	Providence, 21.11.
South Carolina	29	29	4	....	....	15	....	....	4	Charleston, 20.48.
Tennessee	79	56	....	1	....	1	....	....	43	Shelby, 9.70.
Texas	80	*36	....	46	....	4	2	2	28	Medina, 70.60.
Vermont	14	14	....	....	14	....	....	....	....	Chittenden, 23.16.
Virginia	137	101	3	5	....	28	....	....	60	Preston, 22.62: Ohio, 22.50.
Wisconsin	31	17	....	4	31	....	6	3	....	Manitowoc, 64.72; Washington, 62.20.
Terr'ts Minnesota	9	Formed since '40	....	4	9	....	....	1	1	Pembina, 64.29.
Terr'ts New Mexico	7		....	2	7	....	....	....	2	Valencia, 9.51.
Terr'ts Oregon	10		....	7	10	....	....	....	3	Clark, 45.05.
Terr'ts Utah	7		....	4	6	....	....	....	....	Salt Lake, 21.12.
Total	1,626	1,146	54	192	603	155	20	7	441	

* Existing prior to the annexation, December 29, 1845.

OUR SOUTHERN TORMENTOR—THE MOSQUITO.*

Ubi tot sensus collocavit ut in Culice.—*Plin. Hist. Nat.*

An opinion, as common as it is pernicious and vulgar, has prevailed against the propriety of undertaking researches, the utility of which cannot be immediately and directly appreciated. *Cui bono?* This question is, in the first stage of investigation and discovery, both improper and prejudicial, being apt to bias the inquirer and impede, if not prevent, his progress. "To discover, not to apply," is the first step—its

* By Dr. B. Dowler, of New Orleans, Editor of Medical and Surgical Journal.

applications the last, easiest, and least meritorious. Franklin's sublime discovery of the identity of lightning and electricity, by means of a kite, made the application of the conducting rod an easy affair, whereby life and property might be protected.

Discovery has, in perhaps every instance, been preluded by innumerable antecedents calculated to develop the truth, or at least to prepare the mind for its final reception and appreciation.

"I could never have fully comprehended," says Goethe, "how paltry men are, and how little they care for high aims, if I had not had such opportunities to test them in the course of my scientific researches. Now I saw that most men only care for science in so far as they get a living by it, and that they are ready to worship any error which they may find profitable."

Byron, it may be hoped, spoke in an ironical vein when he said that "cash is virtue." But the great reformer, Bentham, maintains with all possible gravity, throughout many pondrous octavos, that utility and virtue are identical.

The mosquito is not a mere thing of *virtu*. It is an encyclopædia of anatomy, microscopy, physiology, and natural history, presenting a series of problems, the solution of which would place the science of organism, function, and vitalism upon a lofty eminence which they have never yet reached, and perhaps, never may. Were the physiology of the mosquito, its alimentation, assimilation, circulation, respiration, secretion, excretion, muscular motion, sensation, generation, development, life, and death, all known and determined, the existing enigmas of human physiology would be almost entirely solved. A thorough knowledge of a single species will serve as a key to the whole animal kingdom.

In some of the States of the Union, by a wise legislation, the natural history of insects has been prosecuted by authority and paid for by the treasury—particularly in reference to the natural history of insects injurious to the public, and the vegetable kingdom: such as Dr. Harris' Treatise (8vo. pp. 459, Boston, 1841,) on some of the insects of New England. Entomological Societies in several States have been formed; and courses of lectures are annually delivered in some of the colleges upon the natural history of insects. But in Louisiana, where insects abound, where some thousands of new ones may doubtlessly be discovered, and where the crops suffer most from them, entomology has scarcely been dreamt of in her philosophy, either as a question of economy or natural history. An accurate knowledge of the cotton-destroying

insect is the most likely means of discovering the method of preventing or restricting its destructive march. He who shall write a good history of a Louisiana bug, may expect an immortality that will not be conceded, perhaps, to a single politician of this day.

All I propose, on this occasion, is to offer a few desultory remarks on the mosquito, not a scientific treatise; and, as it is not deemed polite to look a gift-horse in the mouth in order to know his age or value, so I trust that this *con amore* attempt in the right direction will somewhat disarm criticism, and, perhaps, induce others, better qualified than the writer, to give the public their scientific observations upon the natural history of this insect, and upon the material conditions which tend to circumscribe its extension, as the clearing, drainage, and cultivation of the land—the plants, waters, and localities in which it multiplies, and seeks nutrition by its suctorial operations.

The mosquito is, in fact, a historical animal and not without reputation. Linnæus, flattering philosopher! puts man at the head of the creation, baptizing him with the specific name, SAPIENS! Were a mosquito to write a history of its race and the rôle it has performed in the distinguished transactions in the drama of humanity, it might relate how its powerful tribe compelled Sapor, king of Persia, to raise the seige of Nesibis by attacking his mighty elephants, his beasts of burden, and his serried columns of soldiers—how it dispersed the mighty army of the Emperor Julian; it might quote from Mouffet, author of *Theatrum Insectorum*, showing that the mosquito race had attacked and depopulated several ancient cities. It might dwell with pride on its civil and geographical honors—honors greater than Columbus himself has obtained. Witness mosquito bayous, and bays; and mosquito kingdom, large, fertile and salubrious. "Honors, greater than Ilion to her hero paid." A foreign writer says that the American mosquitos attacked General Washington, piercing his leathern boots, and that they are equally potent on the river Po, in Italy. Mr. Bryant has poetized the mosquitos of New York, as all know.

Mosquito Bar.—The Greek word conopeion—whence the Latin conopeum, is thus defined by Schrevelius: "*velamen ad culeces arcendos*"—a veil to exclude gnats or mosquitos. Indeed, the best lexicographers translate the Greek word conopeion by the term mosquito-net—consinière (Fr.,) mosquitero (Sp.,) námooseëh (Arab.) The Greek word canops, culex (Lat.,) gnat or mosquito, is doubtlessly the radical word

whence the Greek conopeion, the Latin conopeum, or as Horace has it, conopium. Hence the English word canopy.

Herodotus, (born 484 B. C.,) whom Cicero calls the father of history—"*historiæ patrem*," gives an account of the mosquito and mosquito-nets of ancient Egypt, full of instruction, though in some particulars erroneous. "The Egyptians," says he, "are provided with a remedy against gnats or mosquitos—each has a net with which he fishes by day, and which he renders useful by night. The Egyptians cover their beds with their nets and sleep securely beneath them. If they were to sleep in their common under garments, the gnats would not fail to torment them." (ii. 95.) Although this passage may be open to criticism, it indicates the Egyptian origin of the mosquito-net. A net so open in texture (and consequently open to criticism) as to permit the turbid waters of the Nile to traverse its meshes freely, would scarcely be an effectual mosquito-bar, unless we suppose that the Pharaonic mosquitos were of colossal size. Such a supposition is untenable, inasmuch as the mummies of many sacred animals, including some insects, fully attest that no individual variations in the animal kingdom have taken place for thousands of years.

Mr. Lane, in his work on modern Egypt, says, that "the mosquitos are troublesome at night unless a curtain be made to keep them away. A mosquito curtain—námooseeyeh, (from namóos, a mosquito,) is composed of muslin or linen of an open texture, and is suspended by means of four strings, which are attached to nails in the wall." (i. 4,228.)

Having noticed what Herodotus has said in relation to the mosquito-bar, which he represents as having been used only in the marshy regions of the Nilotic valley, it may be proper to add his account of the mosquitoes themselves. He says that, "Egypt contains a surprising number of these insects. As the wind will not suffer them to rise far from the ground, the inhabitants of the higher part of the country usually sleep in turrets." In the days of the Pharaos, mosquitoes were least troublesome in elevated situations. It is so still. Egypt is probably more infested now by these insects than in ancient times, when the population was vastly greater, and the soil better cultivated. At present, as night approaches, these insects swarm forth from depressed grounds, rice-fields, marshy places—in the shades and ruins of the colossal Memnon, the dilapidated Sphinx, the mouldering Luqsor, Karnac, Denedra—the time-defying Pyramids, and the desecrated tombs of the Pharaos.

Although, among the ancient Romans, the term culex may

have been often applied, as the word gnat is among the moderns, to designate the whole family of gnats, yet there can be little doubt that from the earliest times this word was specially intended to indicate the mosquito, which then infested, as it still does, the marshy districts of Italy. Horace, nearly two thousand years ago, having experienced the pain-giving, blood-sucking, and sleep-averting operations of this insect, pronounced against it his malediction:

Mali Culices * * *
Avertunt Somnos.

At the commencement of last century naturalists did not appear to have been acquainted with 10,000 species of animals; now they know nearly ten times this number of insects alone; the beetles or coleopterans amount to 2,000 or 3,000, while the known animals amount to a quarter, and counting the fossil, to half a million of species and varieties.

If we except the great Aristotle, the ancients made but little progress in natural history. With the revival of letters, and the discovery of the art of printing, comparative anatomy and physiology began steadily to advance. The fundamental principles of philosophical zoology eliminated from organization, from typical forms, from function, from affinity or homology, and from analogy, prepared the way for a natural classification of animals, living and extinct—a classification not based on words alone, but on things. In pursuance of this method, the late St. Hilaire deduced from even monstrosity itself laws classific—regularity from irregularity—unity from a seeming confusion.

Culicidæ. Nomenclature.—The hexapod insects (that is, not having more than six legs) Linnæus divided into seven orders—the sixth being called the diptera or two-winged, as the housefly and mosquito.

Entomologists of the present day usually apply the word *culex* to designate a genus of the family *culicidæ*—a family belonging to a great primary division of the animal kingdom, namely, the *Articulata*, which is characterized by a cutaneous skeleton—sometimes calcareous; sometimes horny; sometimes membraneous; consisting of a series of segments and rings, (in insects never exceeding twelve,) joined together in multitudinous forms without essentially deviating from a common type. This compensating external skeleton, like the ordinary internal one of the vertebrated animals, serves as the framework for the muscular apparatus, while it encloses and protects many vital organs.

This firm integumentary envelope, once regarded as identical with horn, is due to a peculiar substance which organic chemists have named *Chitine*.

Of all the *Diptera* or two-winged insects, the gnat family seems to have been the least accurately studied or classified, as may be judged from the fact that its species have been so variously reckoned, as two—three—five—six—fourteen—twenty-eight; a strong contrast to the classificatory precision, real or apparent, in systems of entomology. For example, the *coleopterous*, or four-winged, hard-shelled insects, although exceeding twenty thousand, perhaps reaching twenty-five thousand known species, appear to be better understood than the small tribe of the *culicidæ*.

Of the genus to which the mosquito belongs, the latter is doubtlessly the best type with regard to anatomical and physiological characteristics and developmental transformations, from ova to larvæ—from larvæ to nymphæ—from nymphæ to perfect insects—all of these interesting topics, as well as inquiry into many other observed episodes illustrative of mosquito life, must be omitted at present.

Geographical distribution and climatical range of Mosquitoes.—"All the insects," says Latreille, "brought from the eastern parts of Asia and China, whatever be their latitude and temperature, are distinct from those of Europe and Africa." Mr. Lyell says the insects of the United States, although often approaching very close to our own, are, with very few exceptions, specifically distinguishable by some characters. In South America the equinoxial lands of New Granada and Peru on one side, and of Guiana on the other, contain, for the most part, distinct groups; the Andes forming the division, and interposing a narrow line of severe cold between climates otherwise very similar. (Géographie Générale des Insectes et des Arachnides. Mém. du Mus. d'His. Nat. t. iii.)

The mosquito of all climates appears to possess the same essential characteristics. The same is true to a great extent of the honey-bee, (apis mellifica,) though it flourishes almost exclusively in proximity with civilized man, having been imported into America, it is the harbinger of the advance of civilization, occupying a zone near the settlements. The mosquito, on the contrary, is a native of and flourishes best in a wilderness where moisture abounds.

There is probably no insect or animal so diffused, and so unrestricted as to latitude, as the mosquito. Many writers have grossly erred in assigning its special *habitat* to southern lands; Crabbe says "the mosquito is a kind of gnat in *warm climates*." Baron Humboldt says that mosquitoes are not so general in the Torrid Zone as many believe. On the table lands, remote from the beds of great rivers, there are not

more gnats than in the most populous parts of Europe. Captain Cook says that he found none of these insects at Terra del Fuego, which, he adds, "is perhaps more than can be said of any other uncleared country," while "in New South Wales clouds of mosquitoes sting incessantly."

Louisiana is less infested with mosquitoes than many districts of the torrid and frigid zones. In his travels in the equinoctial regions of America, Baron Humboldt gives some statements, which, coming from almost any other traveller, would scarcely be credited. * * * He mentions certain localities, where, in order to avoid the mosquitoes "the inhabitants have to bury themselves from 3 to 4 inches deep in the sand, their heads only being out, which they cover with a handkerchief." In the missions of the Orinoco there is a large species of gnat, the *zancudo* which is very troublesome by night, while the mosquito is only bad in the day: When two persons meet in the morning, the first questions they address to each other are—"How did you find the *zancudoes* during the night? How are we to-day for mosquitoes?"

Mosquitoes of the Arctic or Frozen Zone.—Humanity may hope for comparative, not absolute happiness. If, as a French philosopher contends, there is always something in the misfortunes of others not displeasing to ourselves—if contentment can be derived from the assurance that others are far more miserable than we are—if it can be shown that the paradise of the mosquito is not in the region of eternal summer, but in the glacial zone, whose icy peaks shimmer in no light but that of the stars and the auroral coruscations during several months of the year, then surely the children of the sun should be reconciled to their lot—to their cotton, coffee, sugar, figs, oranges, palms, bananas, and a moderate proportion of mosquitoes which buzz in their Eden, where, in many places, two or three crops of cereal grains may be gathered every year from an exuberant soil.

A few reliable authorities will sufficiently show the prevalence of mosquitoes in the arctic regions; among them is Captain Franklin—the late Sir John Franklin—the long-lost voyager, who, in his voyages in the Polar Seas, in 1825-'6, gives the most deplorable accounts of the annoyances which the expedition suffered from mosquitoes; they abounded, says he, at the mouth of the McKenzie river under 69° N. lat., at the low temperature of 45° Fah., (only 13° above freezing.) "On the 24th of May they appeared at Fort Franklin, 65° 11′ 56″ N. lat. At first they were somewhat feeble, but a few days after they became vigorous and tormenting."

"July 22d, in 69° 36′ N. lat., tormented with mosquitoes."

On reaching a still more northern latitude he says, "the musquitoes were so numerous as to prevent any enjoyment in the open air, and to keep us confined to a tent filled with smoke, the only remedy; they assailed us as soon as the temperature reached 45° Fah. Myriads which reposed among the grass rose in clouds when disturbed and gave us much annoyance."

Capt. Back, R. N., in 1833, when at Fort Reliance, Slave Lake, complained bitterly of the mosquitoes. Let us glance first at the climate of this same fort. Capt. Back says that in December and January, 1833–'4, the mercury fell 102° below the freezing point—sextant cases, boxes of seasoned wood and so forth all split—the skin of the hands became dry, cracked and opened into unsightly and smarting gashes. Nitric ether became viscid, rum thick, mercury solid. He had, of course, to use the spirit thermometer. It is evident that no degree of cold yet ascertained can kill mosquitoes.

The dismal picture drawn in this high latitude of the glacial zone, of the sufferings of Capt. Back and party from the mosquitoes and sand flies, has no parallel in the torrid zone. "How," says he "can I give an idea of the torments we endured from these insects? They rose in clouds actually darkening the air; to see or speak was equally difficult, for they rushed at every undefended part—our faces streamed with blood—inflammation and giddiness almost drove us mad—even the Indians threw themselves on their faces and moaned with pain and agony. The men were unable to work without the protection of clouds of smoke." After travelling north from Fort Reliance in the month of June, at 40°, "the mosquitoes were quite lively."

Capt. Ross, R. N., in his second voyage, complains in the most piteous manner:—"the mosquitoes were more virulent than in the West Indies, rendering every moment a torment so as to occupy the entire attention, making it almost impossible to act or enjoy." While his ship, the Victory, was enclosed by innumerable icebergs from which she never was extricated, "the mercury descending to 40°—the mosquitoes swarmed in the vessel, and were as troublesome as in the West Indies."

In the British and Foreign Medico-Chirurgical *Review* for October, 1852, is the following statement founded on Dr. Magnus Huss' able work on the endemic diseases of Sweden, published in 1852, at Stockholm.

"In the northern parts of Sweden and Norway, among the Lapp population of these wild regions, conjunctivitis and snow blindness prevails—hardly one of the Lapps escape

from the consequences of living throughout the winter in close huts, surrounded with a dense atmosphere of smoke, and of exposure to the glare of the sun on the trackless snow-fields in spring. During the winter, the only artificial light used by the Lapp is obtained from resinous pine-branches, which, of course, add much to the density of the acrid smoke with which their huts are constantly filled. In summer, the smoke is imperatively called for to drive off the swarms of mosquitoes and gnats, which are then scarcely less troublesome than in the tropical regions."

Malte-Brun, the celebrated geographer, asserts that "the mosquito which torments the traveller upon the banks of the Oronoco resembles that which buzzes in Lapland," and he might have added in Iceland, Lower Hungary, and innumerable other places. At the bases of Greenland's "icy mountains," "mosquitoes appear in the months of June, July, and August, in myriads" to trouble a wretched and sparse population—(Edin. Encyc.)—the very months in which they torment Louisianians the most. The latter are annoyed a month sooner, and often six weeks later.

Mosquitos in times past and in different places.—The Jesuit Father Du Poisson, in his voyage from New Orleans to the Arkansas river, commencing on the 25th of May, 1727, in company with Fathers Souel and Dumas, "under the direction of the good man Simon," gives, during the first days of his voyage, the following account* of the mosquitoes a century and a quarter ago. "This little insect" (the mosquito) "has caused more swearing since the French have been in the Mississippi than had previously taken place in all the rest of the world. Whatever else may happen, a swarm of those mosquitoes embark in the morning with the voyager. When we pass among the willows or near the canes, as very often takes place, a new swarm fastens with fury on the boat, and never quits it. It is necessary to keep the handkerchief in constant exercise, and this scarcely frightens them. They make a short circuit and return immediately to the attack. When we land to take dinner, there is an entire army to be combatted. We make a great fire, which we stifle afterwards with green branches. But it is necessary for us to place ourselves in the very thickest of the smoke, if we wish to escape the persecution, and I do not know which is worse, the remedy or the evil."

"One is eaten and devoured. They get into the mouth, the nostrils and the ears; the face, the hands, and the body are all covered; their sting penetrates the dress, and leaves a

* Drake. Valley Miss., i. 111 et seq.

red mark on the flesh, which swells on those not yet inured to their bite." "After having supped with haste, we are impatient to bury ourselves in the *baire*,* although we know we go there to be stifled with heat. With what address, with what skill does each one glide under his *baire!* But they always find that some (mosquitoes) have entered with them." "May 31st, devoured by the mosquitoes at night. June 3d, arrived at a spot above the Manchat, [Manchac] Bayou Iberville, a branch of the Mississippi which empties into the Lake Maurepas—millions of mosquitoes."

In Richard Hackluyt's translation from the Portuguese of De Soto's Expedition from 1539 to 1543, (published in London, 1609,) it is related, that while the voyagers coasted along the Gulf of Mexico, probably near the mouths of the Mississippi, "the mosquitoes fell upon the men in infinite swarms, producing intolerable torment—stung them—infected their flesh as if they had been venomous. The sails were black with them."

Thus it was at the mouth of the Mississippi more than three centuries ago, and so it is now upon its head waters. Dr. Owen, United States geologist, in his magnificent work—the Geological Survey of Wisconsin, Iowa, and Minnesota, published by the authority of Congress, in 1852, says that "a cause apparently trivial will long delay the settlement of certain regions which he mentions; he says that this cause is the prevalence, especially on the upper Wisconsin, St. Croix, and Black river countries, and thence north to the British line, of venomous insects, the *brulôt* or buffalo gnat, sand-flies, and mosquitoes. At some of the worst spots we could scarcely have discharged our professional duties at all, without a constant protection of mosquito netting."

The luxuriant valleys and humid regions of tropical America, where but little improvement has been made by human hands, the mosquitoes are probably as numerous as they were in the days of Columbus. The late Mr. Stephens, in his travels in Central America in 1841, says: "I verily believe that a man could not, on the banks of the Rio Palisada, have passed an entire night and have lived." Alcedo, one of the early writers on America, gives a similar account of portions of the territory which now forms the state of Tobasco, in Mexico, where, as he affirms, "the mosquitoes scarcely suffered men to exist." Dr. Mosely, in his elaborate work on tropical climates says "that these insects are vexatious in all the West India islands, but are yet worse on the continent.

* *Baire*—an old, obsolete French word for *barre*, not found in the Dictionary of the Academy.

In Mexico and some other places, it was said that they sometimes killed people." Peter Martin, and other historians, in their accounts of the Spanish discoveries in South America, nearly three and a half centuries since, alluded to mosquitoes as being very formidable in marshy regions, where they "filled and darkened the air like clouds."

Re-productive Power.—Entomologists affirm that the flesh-fly (*Musca Carnaria*) family muscida, gives birth to 20,000 larvæ—these larvæ devour so much food that in 24 hours their weight is increased 200 times, and they attain their full size in five days: "there is ground, says Kirby, for the assertion of Linnæus that three of these meat flies could devour a dead horse as quickly as a lion." Such are the ravages of a dipteran like the common house fly. (*Musca Domestica.*)

The mosquito is supposed to lay 300 or 400 eggs five or six times in a season where the summer is long—say 2,000, which in two days become larvæ; in 15 pupæ or nymphæ; in 21 winged insects; a small number compared with the aphis, the plant insect, of which there are many varieties; one of these, according to Reaumur, produces 5,904,900,000.

Water. Food.—Water is necessary to the reproduction and sustenance of musquitoes. They walk and deposit their ova upon it, but cannot re-enter it without drowning, after having cast off their nympha-robes. The temperature of nine out of the twelve months of the year is, in the climate of Louisiana, favorable, with few exceptions, to the development of mosquito ova and larvæ, while all the other agencies favorable to their generation and sustenance abound in many places almost perennially, particularly in New Orleans; as stagnant, filthy waters, exuberant in animal and vegetable organizations, produced by a luxuriant soil and the refuse of the city, stimulated into rapid putrefaction by a hot sun; conditions but too well adapted to produce a vast mosquito crop, while the environs of the town afford these insects complete protection from the intensity of the sun and the turbulence of the winds, by means of the grasses, shrubs, palmettoes, and cypress forests, the whole constituting a musquito elysium for these pestilent dipterans, both rural and urban, permitting them to choose the polluted water with its microscopic plants and infusorial animals, or the Caucasian, Indian and African blood.

The turbid waters of the Lower Mississippi, whether flowing in its natural channel or in pipes and hydrants, does not appear to be congenial to several animals and insects found in its tributaries, as water-bugs, tadpoles, etc; nor does it seem adapted to mosquitoes as a medium of ovulation, larval

development and nutrition; this is owing (it may reasonably be supposed) to the extraordinary purity of the water itself, not to its temperature, nor, perhaps to its current; I say purity, notwithstanding the vast amount of detrital matter suspended in its current, and comminuted to extreme fineness. Perhaps there is no river freer of animalcular, infusorial and microscopic organisms and microscopic plants. Of Muller's seven or eight hundred infusorial species, none appear to abound in the Lower Mississippi. The river water which reaches New Orleans has its sources, for the most part, thousands of miles distant. The rains which fall in the Delta run not *into* but *from* the river. Hence whatever purifaction a running water can derive from a prolonged flow without receiving tributaries towards its debouchure, this river has, seeing that it traverses eighteen parallels of latitude, not to mention longitude, giving an austroboreal axis of nearly one third of the distance from the tropic of Cancer to the North Pole.

The extraordinary salubrity of the water of the Lower Mississippi had always been noticed and believed from the earliest times, though of late, since the prevalence of yellow fever epidemics, a few individuals have erroneously drawn different conclusions.

The late Dr. Drake maintained that its "water is medicinal, and especially adapted to the cure of chronic functional disorders of the stomach, bowels and liver," while the Upper Mississippi contains, according to Professor Baily, quoted by Dr. Drake, abundance of microscopic infusoria—"a specimen of water taken opposite the city of St. Louis had no less than twenty species, all living and active, a part of them soft, and a part with hard silicious shells. Most of the species were in great numbers." (Valley Miss., i. 72.) These are, it may reasonably be supposed, adapted to nourish the mosquito, other conditions being favorable.

From the circumstances above noted and from the fact that the Lower Mississippi receives no filth from tributaries, excepting what is actually thrown into its enormous volume, its purity is easily explained.

It is very far different with short, small rivers, passing through densely populated districts, receiving the refuse of the soil and of the population. Such is the river Thames, which affords the drinking water of Londoners, and which, judging from a series of microscopic observations and engravings published a few months since in the London Lancet, illustrating the impurity of that stream, is a liquid having for its *substratum* an infinity of living forms and plants of

the most *bizarre* configurations—the water being the menstruum of an exuberant filth and infusorial organisms. The Big Drink, as the Mississippi is unclassically called, has but little foreign matter in it beyond its suspended and undissolved silicious, aluminous and some similar substances, while the wells along its shores abound with saline matters, together with other impurities.

So far as I have been able to observe, the Mississippi water is avoided by the mosquito as a medium for hatching, and food.

The food of the mosquito is derived from the flora and infusorial organisms in the waters of a country, rather than from its red-blooded animals. A naturalist defines the mosquito thus: "a little active insect which *lives by sucking the blood of other animals!*" Naturalists generally assert that the female mosquito alone has an appetite for blood. Whether this be true I do not pretend to say, although it cannot be a difficult question, as the male may be recognized by its feathery antennæ or plumes.

The South American Indians, as travellers assert, often ask the question—how did the mosquitoes live before the people came among them. The following experiment will, in part, explain this mystery.

Some years ago, a lady sent me a glass half filled with cistern water containing animalcules, for microscopic examination. The glass was carefully covered on the top with paper, the latter having numerous holes made with a pin to admit the air. These animalcules proved to be the *larvæ* of mosquitoes. These larvæ having passed through all the stages of transformation peculiar to their class, and having freed themselves from their entangling envelopes, took wing and flew from side to side within the glass, occasionally alighting on the water, whence, Venus-like, they had emerged altogether perfect at first.

For many days they were thus kept in prison, and grew larger and more active, without having had any other food than that derived from this impure water. And here I may remark, that after the straining of impure cistern water through a linen cloth, myriads of living animalculæ may often be seen in motion by those persons who possess very strong vision for short distances—at least I possess this power. Such water is, doubtlessly, not only favorable to the ovulation and larval development of mosquito life, but rich enough in animal and vegetable substances (visible with the naked eye, and still more by the microscope,) to afford nutriment to the perfect insect. Substances are raised by winds to the roofs

and gutters of houses, to be washed down by rains into cisterns, where they accumulate, ferment, and turn putrid. On the supposition that the mosquito is not a vegetarian but an animal-feeder, truly carnivorous, the necessity for cleanliness and drainage is not, for that reason, the less obvious, because moisture, filth, and putrefaction, generate microscopic animals (the Infusoria) to the greatest possible extent, and consequently afford the greatest amount of food and the greatest number of mosquitoes. It so happens, however, that these agents produce equally microscopic plants and infusional animals, so that the essential conditions of mosquito well-being will remain after the abstraction or change of all other agents, as red-blood animals.

Influence of temperature upon the Mosquito.—While most animals and plants are restricted to certain climatic or geograpical regions, having but a limited range of temperature, where, alone, they can permanently exist, the cold-blooded mosquito flourishes alike in the eternal verdure of the tropics and in the glacial zone, in depressed marshy valleys between mountains capped with everlasting snows and glaciers, remaining torpid during the long night of five or six months, but swarming forth during the prolonged day of summer, always, however, greatly influenced by temperature in every climate.

There can be little doubt that in very cold countries this insect undergoes congelation every winter without losing its vitality, as is known to be the case with some other insects. Dr. Carpenter says that "in one of Captain Ross' arctic voyages, several catterpillars of the *Laria Rossii* having been exposed to a temperature 40° *below zero*," [72° below the freezing point,] "froze so completely that, when thrown into a tumbler, they chinked like lumps of ice. When thawed they resumed their movements, took food, and underwent their transformation into the chrysalis state. One of them which had been frozen and thawed four times subsequently became a moth. The eggs of the slug have been exposed to a similar degree of cold, without the loss of their vitality." Still, however, the influence of temperature upon the mosquito is, in all climates, very striking: for example—all sudden changes from hot to cold temporarily benumbs it; but after the first shock, if the temperature be not very low, it gradually recovers its activity, with or without the occurrence of an increase of atmospheric heat during the interval within certain limits. A temperature that proves torpifying to it in Louisiana, proves pleasant, or perhaps oppressive, in very high latitudes. This monograph shows that in the arctic

regions, at a temperature only a few degrees above the freezing point, mosquitoes become active. I might show from a record of the temperature, the weather, and the mosquitoes of New Orleans, kept daily for many years, that the Louisiana mosquito is sometimes rendered torpid in the hot season, even when the thermometer ranges above 80°, provided it had ranged much higher within a day (more or less) previously: thus—1839; August 14th, 8 a. m., air 78°, showing a decline of 15° in as many preceding hours; mosquitoes feeble, Aug. 15th; 8 a. m., 76°—at 10 a. m., 78°—at 10 p. m., 80°; mosquitoes almost torpid. On the three following days the mercury reached, sometimes transcending, 80°; easterly winds prevailing, yet the mosquitoes, chilled by the cold, remained inactive at a temperature 30° or 40° above that required to benumb an arctic mosquito.

In uniform weather, the Louisiana mosquito may be, and often is, very active, particularly in the vernal and autumnal seasons, while the temperature is much lower than that indicated above. Although a sudden change from 90° to 75° may torpify the mosquito, it does not follow that the former is, upon the whole, more congenial to its active habits than the latter. Far from it. The weather may be too hot for mosquitoes as well as for man.

The same degree of temperature may produce torpidity, or activity indifferently within a certain limit, owing to late, sudden, or gradual caloric oscillations of the atmosphere:

1846.	Oct.	12,	air at sun-rise	71°;	mosquitoes	active.
"	"	13,	"	"	61°;	"	feeble.
"	"	14,	"	"	58°;	"	feeble.
"	"	15,	"	"	55½°;	"	torpid.
"	"	16,	"	"	63°;	"	active.

Here, a sudden fall of 10° produced feebleness; a further decline of 5½° torpidity; a rise of 7½° restored activity, though this rise was only 2° beyond that at which feebleness took place in the first instance, when the fall within the 24 hours preceding had been 10°.

THE TERRITORY OF KANSAS.

KANZAS or KANSAS, a territory of the United States of America, formed by an act of Congress passed May, 1854, lying between 37° and 40° north latitude, and between about 94° and 30′ and 107° west longitude. About 100 miles of the west portion lies between 38° and 40° north latitude. It is bounded on the north by Nebraska Territory; east by the

States of Missouri and Arkansas; south by Indian Territory and New Mexico; and west by New Mexico and Utah. This territory is about 630 miles in length, from east to west, and 208 in its widest, and 139 in its west part, including an area of 98,000 square miles. The Rocky Mountains separate it from Utah, and the Missouri river forms a small part of the northeast boundary.

Face of the country.—(We quote HALE and his authorities.) The face of the country is nearly uniform from the State line to the base of the mountains, being one continued succession of gently undulating ridges and valleys; the general inclination of the ridges is north and south, but they are thrown into various other directions by the course of the streams and the conformation of the valleys. The first district varies in width from 80 to 200 miles. The second district, separated from the first by a tortuous belt of 100 yards in width, presents to the eye a surface apparently of sand, but covered with grasses and rushes, especially in the valleys and hollows, where grass is abundant during the whole season. This district extends from Sandy Creek west about 350 miles. The third district, a narrow irregular belt, is a formation of marl and earthy limestone, continued south from Nebraska. In this district occur those peculiar formations called "buttes," varying in width from 100 feet to several hundred yards, with flat surfaces, and nearly perpendicular sides, apparently formed by the subsidence of the surrounding land. The fourth district is somewhat similar to the first, at least along the base of the Black Hills, where it has been enriched for ages by the debris; but there is more wood upon it. The east portion is pastoral, but the west, skirting the hills, fertile, finely timbered and watered, abounding in game, wild fruits and flowers. The fifth district, occupying the space between the Black Hills and the Rocky Mountains, presents every variety of hill and dale, mountain and valley, traversed by rivulets, and adorned with lakes; west of this succeeds a sterile expanse of many miles, covered with waving lines of sand, and surrounded by peaks of bare granite; there are, however, some rich valleys, and the hollow murmur of rivulets may be heard beneath your feet. The first district has a limestone basis, and the great coal-fields of Missouri extend 30 or 40 miles into it. This portion is unrivalled in fertility, and has valuable forest trees, including hickory, ash, walnut, and sugar-maple, but it is not quite so well timbered as the country in the same range in Missouri. The valley of the Kanzas is here from 20 to 40 miles wide, has a deep alluvium, and is very productive. The valley of the Missouri is of a similar character. Between the Nebraska and Platte rivers,

says Professor James, the surface of the country presents a continued succession of small rounded hills, becoming larger as you approach the rivers. The soil is deep, and reposes on beds of argillaceous sandstone and secondary limestone. The second district is underlaid by sandstone; the basis of the third is not known, nor is that of the fourth and fifth. Coal is believed to exist plentifully in the last two, as well as an abundant supply of water-power.

Rivers.—The rivers following the declination of the country all have an east or southeast course, with the exception of some of the smaller tributaries. The Missouri forms the northeast boundary, through nearly a degree of latitude, with but little variation to the west, though with many windings. The Kansas, the largest river whose course is mostly within the territory, joins the Missouri just before the river enters the State of Missouri. Including its main branches, the Republican and Smoky Hill forks, it has a course of from 800 to 1,000 miles. The latter runs nearly through the middle of the territory in a direction a little north of east. The Republican fork rises in the northwest of Kansas, but soon passes into Nebraska, which traverses from 200 to 300 miles, when it returns to Kansas, and joins the Smoky Hill fork in about latitude 30° 10′ north, and longitude 96° 40′ west. The principal tributaries of the Kansas below the junction are, from the north, the Big Blue river, rising in Nebraska, and by far the largest; Egoma Saha; Soldier's creek; Santelle and Stranger rivers; and from south Wacharasa. The chief affluents of the Smoky Hill fork are the great Saline and Solomon's forks, both from the north. The Osage rises near 97° west longitude, south of the Kansas, and passes east into Missouri. The Arkansas rises on the west boundary, and has, with the exception of a slight bend into New Mexico, about half its course in this territory. The Neosho, the Verdigris, and the Little Arkansas are its principal tributaries from Kansas, all in the southeast portion. The Little Osage and Marmaton have their sources in this territory. The Platte has its origin in the north of Kansas, and runs north into Nebraska. Steamboats ascend the Kansas to Fort Riley, and the Arkansas, at high water, 100 miles within the territory. The rivers in general have broad, shallow beds, which, in dry seasons, form little more than a series of pools.

Objects of interest to Tourists.—Prominent among these stands Pike's Peak, near the west border of Kansas, which soars to the estimated height of 12,000 feet, and is always covered with snow. The usual variety that characterizes mountainous regions, of gorge, precipice, pass, peak, valley,

and cascade, is here exhibited. The South Park is a beautiful natural inclosure, covered with grass and surrounded by mountains, at a great elevation above the sea. The buttes have been already referred to. Even in the east and middle sections, splendid panoramic views may be enjoyed from the river-bluffs, which rise from 50 to 500 feet.

Minerals.—Reddish, yellow, and blue limestone, with a tendency to crystalization, chert, granite, feldspar, red sandstone, (often occurring in boulders of several tons weight,) and coal in several places, are the known minerals, besides pebbles of granite, quartz, and porphyry, with some large blocks of porphyritic granite.

Forest Trees.—For 200 miles west of the Missouri, several varieties of oak, ash, sycamore, hickory, buckeye, walnut, hackberry, sugar-maple, and sumac are found in considerable abundance on the river bottoms; while in the second district timber is very scarce, except a few cottonwood and willow trees on the margin of the streams. In the mountainous regions of the west, forests of cedar, pine, poplar, and quaking ash, clothe the slopes of the Rocky Mountains, while the river-bottoms are covered with cottonwood, willow, box-elder, cherry, currant, and service bushes.

Zoology.—The buffalo, elk, deer, antelope, prairie dogs, and squirrels are among the quadrupeds; and of the feathered tribes there are the wild-turkey and goose, prairie-hen, partridge, golden oriole, blue jay, red bird, crow, and a great variety of the smaller birds. Among the reptiles is the horned frog.

Forts and Stations.—First among these are the forts, viz: Fort Riley, near the confluence of the Republican and Solomon's Forks of the Kansas; Fort Leavenworth, on the Missouri river, 31 miles above the mouth of the Kanzas; Fort Atkinson, on the Arkansas, near the 100° of west longitude; and Bent's Fort, on the Arkansas, between 103° and 104° west longitude. The stations are Walnut Creek Post Office, on the Arkansas, at the mouth of the creek of that name and near the 90° of west longitude; Big Timbers, a favorite council-ground and rendezvous, 35 miles below Bent's Fort; Pueblo de San Carlos, on the upper Arkansas, in the 105° of west longitude; a post office at the Delaware city, 10 miles above the mouth of Kansas; Elm Grove, a noted camping-ground, 25 miles west of Westport, Missouri; and Council Grove, a famed stopping-place on the Sante Fe trail, in about 38½° north latitude, and 96¾° west longitude. There are besides a large number of missionary stations, among which are the Kickapoo, 4 miles above Fort Leavenworth; the Iowa and Sac, near the north boundary; the Shawnee

(Methodist,) 8 miles up the Kansas; and 2 miles from it the Baptist, and at 3 miles the Friends' school. Sixty miles up the Kansas is the Catholic mission among the Pottawatomies; Mecker's Ottawa mission, south of the Kansas river, near the Missouri line; and near the Baptist Missionary and Labor School; and the Catholic Osage mission, on the Neosho river, in the southeast of the territory, which has one of the largest missions and schools in Kansas, and has ten sub-missionary stations within 60 miles of it, which are visited monthly from it.

Population.—The population of this new territory is mostly comprised of wholly or partly domesticated Indians, (in many instances removed thither from east of the Mississippi,) and of the nomad tribes of the interior and west portion of Kansas. Among the former are the Sacs and Foxes, Iowas, Kickapoos, Pottawatomies, Delawares, Shawnees, Kansas, Chippewas, Ottawas, Peorias, Kaskaskias, Piankeshaws, Weas, Miamies, Osages, and Cherokees; the latter are only partly in this territory. Of the nomad tribes, the principal are the Camanches, Kiowas, Cheyennes, and Arapahoes. Large portions of the claims of the domesticated Indians have already been extinguished, and this process is still going on, and they will probably soon have sold all, and have been removed, or absorbed in the mass of the citizens. Intemperance, improvidence, and disease are powerfully co-operating with the greed of the white man in sweeping them from the face of the earth. That portion of them, and there is such a portion, who are receiving the education and habits of civilization from the missionaries, will probably be gradually incorporated with the mass of the citizens.

Government and History.—The government of Kansas is similar to that of other territories of the United States.

Kansas formed part of the great Louisiana purchase acquired from France in 1803, and subsequently formed parts of the Missouri. Arkansas, and Indian Territories, from which last it was, (as has been stated,) in 1854, erected into a separate territory, after a stormy debate in the national Congress as to whether the Missouri Compromise (an act passed in 1820, forbidding slavery north of 36° 30′ north latitude,) should be repealed. The repeal was carried by a large majority in the Senate, and a decided one in the House; it being thus left to a majority of the white inhabitants of the territory, when they may apply for admission into the confederacy as a State, to allow or forbid slavery as they may deem proper. *

* See Gazetteer by Lippincott, Grambo & Co., Philadelphia.

THE OVERFLOWS AND FRESHETS OF THE MISSISSIPPI.

CAN THE WATERS OF THE MISSISSIPPI BE SO CONTROLLED AS TO PREVENT FUTURE DESTRUCTIVE FRESHETS?

If it could be answered affirmatively, millions of property would be saved from destruction, New Orleans placed beyond the danger of overflow, thousands of fertile acres added to cultivation, and good navigation given to the Ohio throughout the year. The value of the enquiry may justify the attempt, though my remarks may rather be considered as speculations on possibilities than a demonstration of strong probabilities. Professor Ellet, the boldest thinker and perhaps the ablest engineer of the day, has shown in his own able report on that subject, that about five large granite dams with 250 feet base and 60 feet of elevation, with large and substantial gates or locks put on and across the upper tributaries of the Mississippi, such as the Monongahela, the Allegany and others, would make lakes extending many miles back to the widths of their valleys. These lakes would retain the over supply of waters till the rivers would have time to run off their great over surplus. They would hold back when too much, and let off when too little, and regulate navigation.

The great causes of these inundating freshets are, the general winter rains with the great accumulations of snow and ice, which, melting in the early spring, send down their enormous supply in overwhelming torrents. There may be, perhaps, a month's rain held up in snow and ice, waiting for the melting season, which coming on, the then full rivers from the general rains give such an accumulated mass that its consequences must be a destructive overflow. The freshets are always in the spring and summer and, except 1849, never known in the fall. It is to restrain this periodical over supply that these large lakes are intended, and stopped in proper time would retain water enough to furnish enough for moderate navigation through the dry period of fall and early winter. When a river is low, it takes but little water to give tolerable navigation, and when very high, it discharges over so much space as only to want a little time to clear itself. These lakes are intended for this double purpose, and to my mind carry the probability of effecting it. Will these dams cost too much; will they stand; and will their flooding back be too injurious to private property? The dams may cost $250,000 each, well sloped on the water side to receive the pressure on, rather than the force of the water against, would stand. The invasion on private rights would not be more than the sacrifices to all great internal improvements; but on this head the report is satisfactory. It may be said that it is

expecting too much from so small means; and it is certainly the true inquiry. Let us examine a little further before deciding, remembering that these resources of water are to give time. The mass of winter water is certainly very great; but the outlets for its discharge are made by, and are commensurate with it. It was made too at a time when all its great valley, being uncultivated and in a state of nature, the accumulations coming from the same cause were passing at the same time and therefore greater, and required and made the greater vent. The Missouri, the upper Mississippi, and the Ohio, sent their waters down at the same time, and were to be provided for conjointly. Now the cultivation on the Ohio, by cleaning up the surface, gives a much quicker passage to the rains, and the great stream receives this tributary much earlier and in a measure disposes of it before the others come in. The Mississippi above Vicksburg receives and carries in her the waters of all her tributaries. They are all inlets to swell her floods. Below Vicksburg, all are outlets to diminish her floods. The great Ouachita, with her tributaries of the Crocodile, Macon, Bœuf, and Tensaw rivers, running through the back swamp, is the first great outlet. The Achafalaya, through the mouth of the Red river, and the Placquemine, are also great outlets. In the neighborhood of Vicksburg, judging from the fact of its there ceasing to receive, (with but very little exception,) and there commencing to pass off its waters, the overflow ought to receive its highest elevation. I am not sufficiently acquainted with facts to say it is so; I can only say it ought to be so. At Natchez, the whole river and swamp is embraced in a space of 32 miles, and the waters here are confined to large streams and cover less swamp than anywhere else below the mouth of the Ohio. Below this, the average space covered by a great overflow may be 70 miles of back swamp, and there must be nearly as much water passing into the Gulf as is carried by the river past New Orleans.

The above details make it probable that distinctive freshets could be prevented, and that summer navigation, as high up as Wheeling, would be afforded by pouring from these reserved lakes into the river in due proportion a proper supply for the purpose. These advantages would be cheaply paid for at $1,250,000, the supposed cost, or at two millions. I shall close this article with a short notice of two other conflicting opinions on the same subject. The one proposes to confine the river to its bed, deepening the outlet at the entrance into the Gulf and closing the others, so that by its increased volume and speed it may scour out and remove the

soft mud at its bottom, and carry it with all its other materials in solution into the ocean. It is claimed as being in consonance with the operations of nature. The other is, that sluices or other outlets at such elevations as only to come into use to pass off superfluous water are a better security, and that the dredge is the only dependence to deepen the bar. This is also claimed as an example from the operations of nature. They both have difficulties. Nature certainly acts on the first plan with this qualification, that so soon as the flood overtops the banks it relieves itself of the superabundant materials or debris, by throwing it out on the sides or banks where it is stopped by the canes and reeds and there deposited, and the filtered water passes into the back swamp. Whatever may be the rivers length, the abundant floating materials and alluvium, are measureably disposed off by these lateral overflows and filtrations, and saved from deposit on the bottom ; and though they rise higher and higher every year, it is to a small extent, and their relative heights continue the same. When levees are put up, and the reeds and canes and other growths that catched the coarser and larger debris are gone and give place to a smooth surface it cannot relieve itself, and the current carries along all its materials, and when checked for want of supply, deposits from necessity a larger quantity on the bottom and within the levee. The river fills up faster ; the levees require raising, and in time the bed of the river will be higher than the base of the original levees. Such is said to be the case with some of the old settled rivers of Italy and Germany. Old Methusalem, if now born, might live to see the surface of the Mississippi higher than the dome of the St. Charles *if* it could be confined within its banks by levees. The operation of nature might make it reach the same elevation, but it would also have deposited a surface of soil to the same height. The other plan is to leave the river to its own course and only provides a safety valve to commence operating when the flood approximate a dangerous overflow. Suppose two or more sluices, one fourth of a mile wide, were to be kept open above and below New Orleans, at such convenient places as to discharge quickest into the Gulf, their bases to be five or six feet below what would be considered a dangerous overflow, it would certainly save the city and much of the river lands; but how is a base of such extent to be saved from undermining and washing away? It is one of those matters that there should be a certainty of success in before the attempt should be made. This must be left to skill and wise heads, for to say least of it, it is a dangerous experiment.

Reviewing the whole subject, the plan seems preferable that proposes to retain the surplus water at the upper sources of our rivers, and surrender it to the stream at low water at the call of navigation. If the Placquemine could be stopped with propriety, and it could be easily done by the spade, it would give to cultivation a large body of rich land on the lower Atchafalaya, and other bodies of land interspersed in the great wilderness of waters travelling to the Gulf between the La Fourche and the Teché. I have intended by this description of the river to show, that though the mass of its waters are very great that its outlets are equally great, and greater as the river lessens in height as you approach the Gulf. All that is wanted is a little time, as it has ample means of clearing itself of its over supply; and further, that the cultivations and drainings on the Ohio, will every year more and more send its waters earlier into the Mississippi to be disposed of before it receives those of the Missouri, which being yet to a great extent in a state of nature, holds for slower drainage, water kept on the surface by grass, weeds, trees, and other growths of all kinds. The waters in the river come with speed, in the back swamp at a snail's pace. It is probably more than two months in reaching the Gulf from the upper sources.

MANUFACTURES, MINING, AND INTERNAL IMPROVEMENTS.

RAILROAD AND WATER COMMUNICATION.

BY G. W. MORSE, STATE ENGINEER OF LOUISIANA.

I trust you will excuse me in dwelling so long upon this portion of my report, in consideration of what I conceive to be its importance.

There has been much discussion in reference to the propriety of employing white instead of slave labor, and also as to the adoption of the contract system in place of the one now in use. The State engineer, whose only business is to conduct the internal improvements of the State, should certainly be able to throw some light upon these questions. A new system of book-keeping has this year been adopted, which enables us to show in detail the expenditures for different objects since I took charge of this department, and would also aid us in forming correct opinions in reference to those subjects. Our provision bill for the year 1853 amounted to

$5,048 41, or, per head for each negro, including provisions for superintendent of every twenty-five hands, $47 62. Our clothing bill was $2,288 15, or $28 51 per hand. In the year 1854 our provision bill amounted to $5,677 73, which includes some small bills for surveying parties. Our whole clothing bill amounted to $1,942 58, which would make the total cost per head for negro provisions and clothing $73 98⅓.

This I do not think very extravagant, when we consider that the superintendents were all furnished from the same provisions, and that many articles are required for negroes working on boats and in camp which they would not want if living on plantations where an abundance of vegetables could be obtained. We purchase everything, while on plantations corn and more than half the food necessary to support life are raised. As far as my experience goes upon the question of the employment of white or slave labor, and I have employed both, the former on the Barrataria and Lafourche canal, and on the works at the mouth of the bayou Placquemine, the result stands as follows: This department has employed for the last two years an average of one hundred and three negroes, at an average cost for provisions and clothing for the two years of $7,478 00. Nine of them have died in the meantime, one from old age, two from chronic diseases previously acquired, and the other six able men, so that although nine have died in the two years, the State has lost but four per cent. of its capital each year of that time. The account should stand thus, estimating the negroes at $1,200 each:

Value of 103 negroes, at $1,200 each $123,600.

Interest at six per cent. on stock for one year	$7,416 00
Loss on stock for one year four per cent	4,944 00
Provisions and clothing	7,478 00
Total	19,838 00
Total cost for each slave per year	192 60
Cost per month	16 05
One year's labor of 103 white men, at $35 per month, including provisions	43,260 00
Making a difference in favor of slave labor per year of	23,422 00

White labor at Lockport two years ago cost the State one dollar per day and board, and the men whom we hired boarded at that place cost us $15 per month, making the cost equal to $1 57⅔ per day, or $41 per month. At Placquemine this year Captain Lawes, who was the contractor for public works, paid his laborers from $1 50 to $1 62½ per day, they boarding

themselves. Thirty-five dollars, then, per month for white labor cannot be too high an estimate, including cost of board. This calculation is based upon positive facts upon record in this office, and therefore must be correct. There is, however, one item not taken into the account, and that is the fact that negroes in this climate will, for the year round, perform much more labor than an equal number of white men—I think the difference is about two to three—or that twenty negroes will perform as much hard labor as thirty white men, which would increase the difference in favor of slave labor from $23,422 to $37,475 per year. This last difference is not alone owing to the fact that the negroes can work on during the sickly season, while many of the white laborers fail, but to the fact that they are better able generally, and, in my opinion, do actually perform one-third more work. The cost of superintending white and slave labor must necessarily be about the same. Another disadvantage attending the employment of white laborers is the fact that they are more difficult to control than the negro, and when they know you are most dependent on them they will either demand higher wages or leave you. The State force now consists of ninety-seven men, eight having died during the year, four of cholera, two drowned, and two of old chronic diseases, and some ten or fifteen of those remaining are now too old for active and hard service. We should have four hundred more, a part of whom should be placed on our boats to learn how to manage them before the old set are gone. Twenty-five, composed in part of the present force and part of the new, to be placed upon a new, large, and strong boat, made expressly to open the Atchafalaya, and the remainder to be employed clearing off the banks of the most important streams, so that when the snags shall have been removed they will continue clear of them.

Perhaps no country on earth as rich as Louisiana in agricultural resources has greater natural advantages for water communication, and it is acknowledged that transportation by water is the cheapest and best which the wisdom of man has yet discovered. If it were otherwise, why should the State of New York, at an enormous expense, enlarge the Erie canal, especially as railroads traverse the State in every direction, and one even along the banks of the canal itself? Both the road and the canal are required, the former for passengers and light freight, where speed is an object, and the latter for the heavy produce of the country; but the canal transports one ton of freight one mile for one cent and one mill, while upon the New York and Erie railroad it costs two cents and

four mills. For the same distance on the Hudson river the same thing costs seven mills, while on the Hudson river railroad it costs three cents and one mill, and on the New York Central railroad three cents and four mills; and the comparison might go on through all the navigable rivers and canals in the United States, and the result would be the same, namely, that water communication is much the cheapest, and more especially for a planting community like ours. In order that it may not be said that I am mistaken in the facts of the case, I insert the following table, an extract from the annual report of the State engineer and surveyor of canals in the State of New York, dated February 9, 1854, which shows the cost of transportation by railroads and canals in different States.

Charges for transportation between the seaboard and the west, by the various railroads and water lines.

	Per ton (of 2,000 lbs.) per mile.	
	Cents.	Mills.
From New York:		
Hudson river	—	7
Erie canal	1	2
Western lakes, short voyage	1	—
Do. long voyage	—	5
New York and Erie railroad	2	4
Hudson river railroad	3	1
New York Central railroad	3	4
Western roads, from Buffalo to Chicago, average	2	5
From Boston to Western Lakes:		
New England roads from Boston to Rouse's Point	2	7
Northern road, Rouse's Point to Ogdensburgh	2	—
Lake Ontario and Welland canal	—	7
Western road, Boston to Albany	2	3
From Quebec:		
St. Lawrence river and canals	—	6
From Baltimore:		
Baltimore and Ohio railroad	3	—
From Philadelphia:		
Pennsylvania canal to Pittsburgh	2	4
Do. railroad do. (estimated)	3	5
Ohio river	—	8
From New Orleans:		
Mississippi river, (lower)	—	6
Do. (upper)	—	9

Ohio canals - - - - - -	1	—
Wabash and Erie canal - - - -	1	9
Illinois canal - - - - - -	1	4
Do. river - - - - - -	1	2

In the ordinary boating stage of Red river a bale of cotton, weighing one-fourth of a ton, is carried from Shreveport to New Orleans for the sum of $1 25; distance, say about six hundred and fifty miles, which makes the cost less than two mills per mile, or for four bales, equal to one ton, less than eight mills per mile. In ordinary low water, after the boats cease running over the falls at Alexandria, the price has been $2 50, water still lower $3, at which rate very little is shipped; and the cost in the very lowest water has gone up to $5 per bale, at which price, of course, not one thousandth part of the crop would be forwarded to market. For as the planters have generally held back their cotton for a rise in the water, rather than pay double freight, which is $2 50 per bale, how can it be expected that they will ship when the cost is from $3 50 to $5? If the roads could compete successfully with these prices how much could they carry, or what portion of the whole river crop could they take to market, touching the stream only in two or three places in its whole length.

The practical working of some of our railroads may be seen below, where four and one-half bales of cotton is supposed to be equal in weight to one ton of two thousand pounds, and one hogshead of sugar equal in weight to twelve hundred pounds.

	Articles carried.	Distance in miles.	Price paid.	Cost per ton per mile.	
				Cents.	*Mills.*
West Feliciana railroad..	Bales of cotton.	28	$1 75	28	1
Port Hudson railroad....	Bales of cotton.	28	50	8	—
Great Western railroad..	Hhds. of sugar.	52	1 50	4	8
Great Northern railroad..	Bales of cotton.	97	1 00	4	6
Mexican Gulf railroad...	Hhds. of sugar.	27	1 00	6	1⅓
Mexican Gulf railroad...	Bales of cotton.	27	25	4	1⅓

Now, suppose we had a railroad constructed between New Orleans and Shreveport, in a distance of 365 miles, and that the road were to carry freights at the same prices that are now paid for river transportation, in the present miserable condition of the river, and then see how these prices would remunerate the road—each bale of cotton, weighing five hun-

dred pounds, which is believed to be the average weight of Red river cotton shipped in low water.

Railroad from Shreveport to New Orleans.

	Bales cotton.	Distance in miles.	Prices now paid.	Per ton (of 2,000 lbs.) per mile.	
				Cents.	*Mills.*
Ordinary boating stage of R. R.	.....	365	$1 25	1	3⅜
Boats stopping at falls at ordinary low water of river....	Pres't river prices.	365	2 50	2	7⅓
Very low.....	.....	365	3 50	3	8⅓
Lowest water ever known....	.....	365	5 00	5	5
Railroad cost estimated in accordance with prices paid on Great N. & Great W. roads.	.....	365	4 29	4	7

Similar results will be shown if we undertake to transport cotton from Shreveport to Vicksburg, and then to New Orleans by the Mississippi river ; railroad distance estimated at 176 miles, price per ton, estimated at four cents seven mills per mile, or the same as now paid on the Great Northern and Great Western roads.

Bales weighing 500 pounds.	Bales cotton.	Distance in miles.	Price paid.	Per ton (of 2,000 lbs.) per mile.	
				Cents.	*Mills.*
Railroad	.....	176	$2 06	4	7
Thence to N. Orleans by river.	.....	375	1 00	1	⅓
Total, without cost of storage at Vicksburg	.....	.....	3 06		

It appears that if the roads were to take cotton at present steamboat prices, during good navigation, they must, in one case, carry it at the rate of 1 cent 3⅜ mills per ton each mile, and in the other be paid only twenty-five cents from Shreveport to Vicksburg, on each bale, or $1 per ton, which would only be about $3\frac{6}{10}$ mills per mile for each ton. The highest price here would be only about one-third of the average prices paid upon the New York roads.

In ordinary low water, when freights are doubled on the river, and come up to $2 50 per bale, one road would obtain 2 cents 7⅓ mills per ton for each mile, and the other being paid $1 50 from Shreveport to Vicksburg, on each bale, or $6 per ton, would get 3 cents and 4 mills per ton for each mile, which is 1 cent and 3 mills less than our present rail-

road prices in this State, but nearly equal to northern prices. At $3 06 per bale, which would allow $2 06 from Shreveport to Vicksburg, or $8 27 per ton, that road would receive the prices now paid upon the northern and western roads, provided there should be no charge for storage at Vicksburg, but even this is one-third more than the cost would be by the river after the necessary improvements should have been made.

It is probable that railroads could compete successfully with our highest low-water rates, unless the river were improved; but with the others I think they could not, unless freights could be carried upon them cheaper in Louisiana than in New York; which I consider exceedingly doubtful, as about half of the earnings of the latter comes from passengers, on which most of the profits are made, and which could not form a considerable item in this country. The following table, taken from the annual report of the State engineer and surveyor of New York, upon the subject of railroads, dated February 16, 1854, pages 76 and 77, will, I think, bear me out in this opinion:

Name of Corporation.	Receipts.			
	Passengers.	Freight.	Other sources.	Total.
Albany & Schenectady, for 10 months.	$208,043 54	$261,109 61	$8,884 96	$478,038 11
Buffalo, Corning, and New York	33,718 20	27,344 11	4,235 70	65,298 01
Buffalo and New York City	117,555 82	72,751 41	4,591 70	194,898 43
Buffalo and Niagara Falls	103,786 82	12,250 01	1,000 00	116,986 83
Buffalo and State Line	264,304 18	101,837 78	6,806 44	372,948 40
Buffalo and Rochester, for 10 months.	204,855 97	140,378 31	14,368 52	350,608 80
Cayuga and Susquehanna	24,388 83	49,296 02	27,052 12	100,731 97
Canandaigua and Elmira	83,786 93	60,184 81	2,988 89	146,855 13
Canandaigua and Niagara Falls	41,525 30	11,690 00	373 74	53,589 04
Hudson River	943,986 75	310,474 90	44,205 44	1,298,617 09
Long Island	159,589 95	64,846 13	104,986 73	329,372 81
New York and Erie	1,674,702 33	2,592,898 80	217,324 41	4,484,985 54
Northern	111,776 35	314,058 69	17,376 61	443,211 65
Oswego and Syracuse	55,629 30	32,458 14	4,475 49	92,562 93
Rensselaer and Saratoga	128,887 91	61,000 00	18,083 15	207,971 06
Rochester, Lockport, and Niagara Falls, 10 months	172,086 46	62,850 45	6,663 36	241,600 27
Rochester and Syracuse, for 10 months.	533,690 48	347,980 91	23,314 80	904,986 19
Saratoga and Washington	106,209 72	52,499 77	6,257 37	164,966 86
Sackett's Harbor and Ellisburg	2,388 10	1,134 48	.....	3,522 58
Schenectady and Troy, for 10 months.	27,816 54	46,395 05	1,153 32	75,364 91
Syracuse and Utica, for 10 months	318,516 51	215,301 35	15,577 50	549,395 36
Troy and Boston	88,262 87	66,680 35	3,258 65	158,201 87
Troy and Greenbush	41,846 44	40,625 14	1,940 70	84,412 28
Utica and Schenectady, for 10 months.	491,635 59	411,811 42	57,752 71	961,199 64
Watertown and Rome	145,391 67	179,827 31	9,681 65	334,900 63
New York Central, for two months, embracing above numbers	720,671 85	353,003 14	.....	1,073,674 99
Total	6,799,953 82	5,890,638 10	602,298 46	13,292,890 38
New York Central, for 12 months	2,677,316 85	1,888,890 25	1,201,390 16	3,570,187 08
New York and Harlem	555,654 52	292,374 06	61,337 94	909,366 52

It is probably true that the first cost of construction is less in this country than in the north, but nearly all other expenses are greater here than there. Labor is higher, which is one reason for the greater cost of water transportation here than in New York; repairing machinery more expensive; the decay of timber much more rapid; so that the superstructure of our roads must be more often replaced than theirs. It may then be fair to presume that taking the whole costs of construction, repairs, and working the roads together, our costs would be the same as theirs, but we are then forced to put such a price upon freights as will remunerate us for the want of the profits which they make on passengers. This might bring our price of freights to four or five cents per ton per mile, and this would be low enough where there could be no competition with water.

I am unable to account for the heavy charges of the West Feliciana and Port Hudson railroads, the one fourteen and the other four times the cost of water transportation, but understand that it is in consequence of the great cost of keeping these roads in repair. The difference between the cost of transportation by these two roads and by the Mississippi river from their terminus to New Orleans is shown below:

	Cotton.	Miles.	Price paid.	Cost per mile per ton.		
				Cents.	*Mills.*	
West Feliciana railroad....	.....	28	$1 75	28	1	Railroad.
Bayou Sara to New Orleans	.....	165	75	2	.....	Water.
Port Hudson railroad	.....	28	50	8	.....	Railroad.
Port Hudson to N. Orleans.	.....	158	75	2	1	Water.

But notwithstanding these enormous prices, these roads are doubtless a great public benefit; for by what other means could produce be transported in their precise locality at the same cost? No man hauls a ton one mile for eight cents; if they could they would not send by railroad. This is not intended as an argument against railroads, but only to prove that in this State, particularly, we must use water communication, whenever it is practicable to do so; and if the roads were made we should find it necessary to improve our streams, simply because our crops could be conveyed to market on them for so much less money than upon the roads. I am so far from being opposed to them that I would advocate their construction wherever water cannot be used as a means of transportation, as being the very best that can be provided by the art of man, and because the enhanced value of the

land through which they pass goes far to pay for their cost of construction. Any road running out from our water courses through our rich lands is a great public benefit; it has no competition with water, and can have no other which it cannot overcome; it brings the produce to the natural streams, for the least possible price at which it could be done, and they take it thence to market for less than half the price which the roads could do it for. Yet the road would not compete with the river nor the river with the road, but one creates a necessity for the good condition of the other. The road causes the back country to be settled up and highly cultivated, increasing the production, which makes it the more necessary that the stream which carries to market should be in good condition. It will be immediately conceded that this road has increased the population and production of the country through which it runs, and thereby rendered it the more important that the river should be in good condition below its terminus; but it can be clearly shown that if this road were continued from Bayou Bœuff to New Orleans, so as to make a complete line through from Alexandria, that it would create a competition from that place to the market between the water and the road, in which the water must come off victorious. Any road running west from Red river through the heart of Texas, will be of incalculable benefit, and I may say, almost regardless of cost of transportation, so that it be less than the cost by the present mode. There would be no competition with water until the produce reached Red river, but then, even if the road were continued, three-fourths of it would go by water to market. Any road connecting us with the great west, where our sugars are wanted, at a season of the year when they can only go through the eastern cities, and when we require western produce in exchange, which at times comes by the same route, will be of great advantage. It is thought by many that this State has lost at least two millions of dollars this season in consequence of the want of a market for sugars, and the high prices of produce resulting from the condition of the western rivers.

AGENCIES TO BE DEPENDED ON IN THE CONSTRUCTION OF INTERNAL IMPROVEMENTS, WITH REFERENCE TO TEXAS, BY A TEXAN—NO. 2.*

I would here close this communication were it not for some matters from abroad that may have an undeserved influence in preventing the early adoption of the State system in Texas. I allude to the sale of public works in other States. It is a

* Continued from last No. of Review.

matter of history that Michigan sold her railroads at 80 cents on the dollar of their cost. I have always been of opinion that it was unwise for that State to have sold its public works for even twice the present average value of corporate stocks, or but about 35 per cent. better than they stood one year ago. It would have been far better for that State to have retained its public works, and prosecuted its system in connexion with more carefully improved statesmanship, than to have stupidly given way to the speculating projects of some of her own citizens in connexion with others from abroad. How the scheme was laid and worked and managed to effect the measure is not for me to delineate, it is sufficient for me to know that speculation, more than patriotism, was at the bottom of it. I think a little history and analogical comparison will bring us all to the same conclusion.

By the last census report it appears that in 1853—

New York had of completed canals	989	miles.
" " railway	2,245	"
Pennsylvania had of completed canals	936	"
" " railway	1,464	"
Ohio had of completed canals	921	"
" " railway	2,367	"

The history of these canals and railways, comprising 10,200 miles of internal improvement, may afford the statesman and political economist of Texas the most ample source of instruction. It will be borne in mind that most of the canals in all these States, as well as some railways in Pennsylvania, belong to the respective States, and were constructed with means mostly, if not wholly, borrowed on the public credit. New York commenced her system in 1817, Pennsylvania a little later, and Ohio as soon as the Erie canal opened to that State the advantages of lake commerce.

Were we to resort to the executive messages of New York, Pennsylvania, and Ohio, with the accompanying documents, for the history, progress, and results of their respective State works, we should go to a source of information that would not deceive us. We should there see evidence of wisdom in statesmanship, not perfect in all its incidents, it is true, but in the main to such a degree as THE WORLD HAS NEVER WITNESSED ELSEWHERE. The rapid development of the agricultural, mineral, and mechanical resources of wealth, commerce, and population in those States astonished the political economists of Europe. This "statesmanship in the wilderness," so called, received the encomiums of the wise men of the east, and gave to the north the appellation of "the great north." "America," says one, "seems a young and vigorous man, leading in the advance, whilst Europe, in its de-

crepitude, is slowly following on crutches." These works were the basis of accelerated prosperity. They are still found to be the main agency of its continuance. Take their business, patronage, tonnage, and comparative cost of transportation for the last current year, and they stand pre-eminent above all competition, as assistants to agriculture and commerce. These State works in the aggregate cost about one hundred and ten millions of dollars. Had the transportation upon them for the last year been charged with corporate prices, it would have nearly equalled, if not exceeded, the aggregate freight receipts on all the railways in the Union owned by companies, amounting to 20,000 miles, and constructed at a cost of six hundred millions of dollars. What, then, has wrought out this wonderful change in popular opinion, and seduced the unthinking multitude into an advocacy of the corporate system.

The corporate system of railways in the United States commenced its vigorous growth about the year 1838. In a few years it got into competition with the State works in its claim on the public for patronage. Its insidious and interested advocates in New York commenced at an early day their attacks on the State system. Taking advantage of the financial depression of 1841–'42, the seductive effort was commenced to influence the people of the State into a sale of their public works. The project had but a few advocates, but those, from incessant activity, were made to appear like many. Sufficient was attempted to alarm the public mind into forethought, and the corporators were answered by a clause in the constitution of 1846 to the effect that "the canals of the State should never be leased or sold, but remain the property of the State, and under its management forever."

The corporators, however, succeeded in gaining an exclusive footing in some of the western States. Michigan, Indiana, and Illinois, dazzled by the success of the State systems of New York, Pennsylvania, and Ohio, commenced at an early day the attempt at imitation. Disregarding every principle in the proper economy of adjustment, and heedless of adopting any adequate basis of finance, the two latter States rushed into undertakings which the oldest of the States would barely have been able to accomplish under the best regulated system. The embarrassment in finance consequent on such imprudence, in connexion with the impatience of the people at delay, enabled corporators to drive their projects with success, and thus obtain exclusive control of the transportation thoroughfares in those States. The dominion of corporate monopoly is established in all of them.

From 1842, onward, corporators have been sedulously and industriously at work, to get rid of the effect of State competition. They find themselves, however, with all their slanders and machinations, unable to stand against its effects. The Railroad Journal has been obliged, within the last six months, to withdraw the scheduled value of railway stocks from the public gaze. Sixty cents on the dollar, in present value, or forty per cent. average sacrifice is an aspect too alarming. It seems to have aroused some three hundred millions of invested capital (or rather the part of it not stolen) into a life and death struggle for existence. To such an extent has public opinion been manufactured, that the State works of Pennsylvania are already advertised for sale. In Ohio some of the papers are endeavoring to prepare the public mind for a similar project; and last of all, the State engineer and surveyor of New York, after enumerating a great number of fancied obstacles to the prosperity of the canals, uses the following language in his report: "*In my judgment, there is but one truly effective remedy, which is, the sale of the public works, in whole, or in part.*" Poor fellow! I gravely suspect, as the cow catcher in Texas would say, the corporators "have taken a turn on him." A little time since I published an extract from the Railroad Journal, by which it appears that these canals, constructed at an expense of less than forty millions, had transported six times as much during the last year as the three competing railroads, constructed at an outlay of about eighty-five millions. I also made, and published, a calculation based on comparative cost of transportation, by which it would appear that twelve and one quarter millions had been saved during the last year by the cheaper transportation on the State works. This report and conclusion of the state engineer is so at variance with that of his predecessor, (Mr. McAlpin,) for the year before, that a stranger would scarce know what to think from the disparity between the two. When I saw the conclusion of this report, set in capitals in the columns of the Journal of Commerce, and standing there unrebuked, I must confess to a sensation of disgust, such as I have seldom experienced. What will be the fate of the public works in the two former States, unprotected from sudden sale by any constitutional provision, is uncertain. Many incidents, however, connected with this struggle are certain. If corporators, always mercenary in prosperity and desperate in adversity, desire the interested advocacy of the press, they have the power to make it so. If they require interested legislators, cabinets, or governors, they have the power to make them so. Almost everything shows degeneracy before

railway financiering. Premiers, lords, and commons, are no more suffered to escape contamination than the needy politician. Few men have ever fully contemplated the political Jesuitism of this vast power; and fewer still have ventured on the attempt to grapple with its influence. There is but one arena, and one tribunal on earth where it is possible to check its overgrowth, and awe it into subjection, or even decency. *That tribunal is the people.*

As an humble individual, I have no compromise to make with the corporate system of improvements. Feeble in the comparison in its power to make progress; unavoidably corrupt, and corrupting in its influence; generally proceeding step by step on the platform of falsehood and deception; I find nothing to recommend it. However loud its advocates may be in sounding its praises as an instrument of public prosperity, after admitting all its merits, still I feel no respect for an agency that can, at best, give a people but fifty per cent. of what they can accomplish without it.

Should the State system of improvements ever be adopted in Texas, I hope the corporate system may never have a place by the side of it. The two are incompatible, and warfare between them in case of competition inevitable. It is nearly impossible to keep the public mind contented under the best system that ever existed, where a powerful and active influence is ever on the alert to poison it. There is one proposition that, if adopted, would afford a sovereign remedy against corporate imposition. Let us adopt a constitutional provision, making the stockholders in all corporations, created for business profit, personally responsible for the debts of the company; and we would have no more trouble from them than we should from mosquitoes and horse-flies, when the mercury stood at zero.

LORENZO SHERWOOD.

CANALS AND RAILWAYS.

These are not rivals; they are auxiliaries. Up to this time, canals have yielded the largest profit to their owners. In Great Britain there has been a fair trial of these modern commercial channels. Her canals average an annual income of over five per cent., while her railways yield but three sixtenths per cent. Railways have the great advantage in monopolizing the travel and the freight in articles of small weight and great value. Railway managers have sunk money by carrying freight below cost. This has been done, chiefly, to compete with water channels. It has also been, to

a great extent, with a view to show increased gross earnings. Great deceptions on stockholders have been practiced in this way.

I have compared the results of the freight business of sixteen of the principal railroads of New York and Massachusetts, eight in each State, having an aggregate length of 2,314 miles, and built and equipped at a cost of $138,000,000, with the New York canals of 800 miles in length, and which I suppose have cost about $40,000,000.

The freight carried, one mile, by sixteen railroads, last year, was, in tons - - - - 359,488,837.
The freight by the canals, carried one mile, during the season of navigation, last year, was 668,659,043.
Excess by the 800 miles of canal over the 2,300 miles of the sixteen railroads - - 309,170,412.

The cost of carrying one ton per mile, on the canals, was eight mills, and on the railroads averaged nearly three cents. Some of these roads, according to their own showing, carried freight below cost; and every man conversant with the management of railroads in this country, a few years past, knows that this has been done in several instances, to the extent of sinking the whole capital of the roads.

The canals that have their lake termimnation in Toledo, need only to be well managed to become profitable to the owners as well as a rich blessing to the country through which they pass. In private hands, they would be so at once.

Yours,

J. W. SCOTT.

THE COAL FIELDS AND PRODUCTS OF THE OHIO VALLEY.

The coal trade is likely to increase so rapidly, and become so large an element of traffic, that it is worth while to look into the sources of supply and demand. The first that strikes us is the remarkable and most important fact, that the Ohio valley *contains* (*proportionally*) *the largest coal field in the world.*

1. What is the Ohio valley? The Ohio valley comprehends all that space of country penetrated and watered by the Ohio river and its tributaries. It comprehends Western Pennsylvania, Western Virginia, all of Ohio, Indiana, and Illinois, up to the narrow rim of the lakes, and the States of Kentucky and Tennessee. It comprehends a surface of about 230,000 square miles; and on that surface the coal basins, or in other words, the surface which is underlaid with coal is, according to the best authorities, as follows:

	Sq. miles surface.	Sq. miles coal surface.
Western Pennsylvania	20,000	10,000
Western Virginia	25,000	18,000
Ohio	35,000	10,000
Indiana	33,000	7,500
Illinois	40,000	35,000
Kentucky	40,000	13,500
Tennessee	40,000	5,000
Aggregate	233,000	99,000

The above surfaces are not those of the States named, but of that part in the valley of the Ohio. We see, then, the extraordinary fact, that more than *one-third the valley of the Ohio is underlaid with coal.*

Let us now look at what the production of coal *is*, in the Ohio valley, and *what it will be*. The present production of coal in the Ohio valley is, after careful investigation, supposed to be as follows:

	Bushels.
Consumption of Pittsburg for all purposes	22,300,000
Exported from Pittsburg	14,400,000
Consumption of Wheeling	2,000,000
Product of Pomeroy and vicinity	7,000,000
Received at Cleveland from Ohio mines	3,000,000
Product of Nelsonville	1,200,000
Product of other places in Ohio	3,000,000
Product of Kentucky	2,000,000
Product of Indiana	1,500,000
Product of Illinois	1,000,000
Product of Tennessee	1,000,000
Aggregate	58,400,000

In round numbers, we produce *sixty millions of bushels* of bituminous coal in the valley of the Ohio. But what is that in comparison with the consumption in other countries, and compared with what it will be! Let us look at the ratio of consumption in other countries, and compare it with our own.

	Ratio.
Great Britain	34 to 1
France	3 to 1
Belgium	25 to 1
Prusia	⅓ to 1
United States	9½ to 1
Ohio valley	10 to 1

This shows that the consumption of coal in the Ohio valley now is not more than one-third in *proportion* to that of France, England or Belgium.

This is owing to the cheapness of wood and the want of capital to develop the mines. But these obstacles are rapidly passing away. Wood is becoming dear in the commercial towns, and capital is fast learning that mining is a profitable

business. It is quite obvious that the time is not far off in which the *proportion* of coal consumed will be quite as high in the States of Ohio valley as in Belgium. Besides this, it must increase likewise with the increase of population. Combining these, so as to advance the *ratio*, in the proportion of the increased population for the next thirty years, and we have the increase of coal consumed as follows, viz:

	Population.	Ratio.	Con. of coal.
In 1850	5,000,000	10	60,000,000
In 1860	8,000,000	13	104,000,000
In 1870	10,600,000	17	180,000,000
In 1880	14,200,000	23	326,000,000

This will probably be much below the results; for the rapid increase of manufacture, consequent on the opening of the central western mines of coal, iron, copper, zinc and lead, will increase population at a more rapid rate than is above stated; and the same cause will also increase more rapidly the *ratio* of consumption to population.—*Railroad Rec.*

THE HIRELING AND THE SLAVE.

Some months ago we published an extract from the able poem of William J. Grayson, of South Carolina, entitled "The Hireling and the Slave."

Having lately obtained the work complete from John Russell, of Charleston, we are disposed to add another extract, and will also incorporate the preface as of general interest to our readers:

The malignant abuse lavished on the slaveholders of America, by writers in this country and England, can be accounted for but in one way, consistently with any degree of charitable consideration for the slanderers. They have no knowledge of the thing abused. They substitute an ideal of their own contriving for the reality. They regard slavery as a system of chains, whips and tortures. They consider its abuses as its necessary condition, and a cruel master its fair representative. Mr. Clarkson took up the subject, originally, as a fit one for a college exercise in rhetoric, and it became a rhetorical exercise for life to himself and his followers. With these people the cruelty of slavery is an affair of tropes and figures only. They have shown as little regard for truth, fairness and common sense, as they would do to gather all the atrocities of their own country committed by husbands and wives, parents and children, masters and servants, priest and people, and denounce these several relations in life in consequence of their abuses.

The laborer suffers wrong, abuse and cruelty in England, but, they say, it is against the law, against public opinion; he may apply to the courts for redress; these are open to him. Cruelty to the slave is equally against the law. It is

equally condemned by public opinion; and as to the courts of law being open to the pauper hireling, we may remember the reply of Sheridan to a similar remark,—yes, and so are the London hotels—justice and a good dinner, with champagne, are equally within his reach. If, in consequence of the evils incident to hireling labor—because there are severe, heartless, grinding employers and miserable starving hirelings, it were proposed to abolish hireling labor, it would be quite as just and logical as the argument to abolish slavery because there are sufferings among slaves, and hard hearts among masters. The cruelty or suffering is no more a necessary part of the one system than of the other. Notwithstanding its abuses and miseries, the hireling system works beneficially with white laborers; and so also, notwithstanding hard masters, slavery, among a Christian people, is advantageous to the negro. To attempt to establish the hireling system with Africans, would be as wise as to endeavor to bestow the constitutional government of England on Ashantee or Dahomey. In both cases there would be an equal amount of abstract truth and practical absurdity.

Slavery is that system of labor which exchanges subsistence for work, which secures a life-maintenance from the master to the slave, and gives a life-labor from the slave to the master. The slave is an apprentice for life, and owes his labor to his master; the master owes support, during life, to the slave. Slavery is the negro system of labor. He is lazy and improvident. Slavery makes all work, and it ensures homes, food and clothing for all. It permits no idleness, and it provides for sickness, infancy and old age. It allows no tramping or skulking, and it knows no pauperism.

This is the whole system substantially. All cruelty is an abuse; does not belong to the institution; is now punished and may be in time prevented. The abuses of slavery are as open to all reforming influences as those of any other civil, social, or political condition. The improvement in the treatment of the slave is as marked as in that of any other laboring class in the world. If it be true of the English soldier or sailor, that his condition has been ameliorated in the last fifty years, it is quite as true of the negro.

If slavery is subject to abuses, it has its advantages also. It establishes more permanent and, therefore, kinder relations between capital and labor. It removes what Stuart Mill calls "the widening and embittering feud between the class of labor and the class of capital." It draws the relation closer between master and servant. There is no such thing, with slavery, as a laborer for whom nobody cares or

provides. The most wretched feature, in hireling labor, is the isolated miserable creature who has no home, no work, no food, and in whom no one is particularly interested. *This is seen among hirelings only.*

I do not say that slavery is the best system of labor, but only that it is the best, for the negro, in this country. In a nation composed of the same race or similar races, where the laborer is intelligent, industrious and provident, money wages may be better than subsistence. Even under all advantages, there are great defects in the hireling labor system, for which, hitherto, no statesman has discovered an adequate remedy. In hireling States there are thousands of idlers, trampers, poachers, smugglers, drunkards, and thieves, who make theft a profession. There are thousands who suffer for want of food and clothing, from inability to obtain them. For these two classes—those who will not work and those who cannot—there is no provision. Among slaves there are no trampers, idlers, smugglers, poachers, and none suffer from want. Every one is made to work, and no one is permitted to starve. Slavery does for the negro what European schemers in vain attempt to do for the hireling. It secures work and subsistence for all. It secures more order and subordination also.* The master is a commissioner of the poor, on every plantation, to provide food, clothing, medicine, houses, for his people. He is a police officer, to prevent idleness, drunkenness, theft, or disorder. I do not mean by formal appointment of law, but by virtue of his relation to his slaves. There is, therefore, no starvation among slaves; there are, comparatively, few crimes. If there are paupers in slave States, they are the hirelings of other countries, who have run away from their homes. Pauperism began, with them, when serfage was abolished.

But you must confess, it is said, that slavery is an evil. True enough, in the same sense in which the hireling's hard labor is an evil. But the poet tells us that there are worse things in the world than hard labor, "withouten that would come a heavier bale;" and so there are worse things for the negro than slavery in a Christian land. Archbishop Hughes, in his late visit to Cuba, asked the Africans if they wished to return to their native country; the answer was always *no.* If the African is happier here than in his own country, can we say that for him the establishment of slavery is an evil?

* One of the best arrangements for the relief of the hireling laborer is the provision made in France, of houses where the children of laborers are taken in when the laborers go to work in the morning, are carefully attended during the day, and restored to the parents on their return at night—a similar provision for the care of children is found on every plantation.

If the master is contented with his part in the system, with what reason can we regard it as an evil, so far as he is concerned? Slaves and masters are equally satisfied. The discontented are those who are neither.

What more can be required of slavery, in reference to the negro, than has been done? It has made him, from a savage, an orderly and efficient laborer. It supports him in comfort and peace. It restrains his vices. It improves his mind, morals and manners. It instructs him in Christian knowledge.

But the quarrel is with the master, and the design is to calumniate and injure him. And why this attack on the master? Who, among its pretended friends, will dare to say that they have done for the African race what the slaveholders of North America have done, and are doing? What abolitionist has bestowed on the negro the same enduring patience, the same useful education, the same care and attendance? Who, among them, has done, or given, or sacrificed as much? Under the master's care, the miserable black savage has been fed, clothed, instructed in useful arts, and made an important contributor to the business and enjoyments of the world. What have the abolitionists done, what have they given, for the negro race? They use the slave for the purposes of self-glorification only, indifferent about his present or future condition. They are ambitious to bring about a great social revolution—what its effects may be they do not care to inquire.

All Christians believe that the affairs of the world are directed by Providence for wise and good purposes. The coming of the negro to North America makes no exception to the rule. His transportation was a rude mode of emigration; the only practicable one in his case; not attended with more wretchedness than the emigrant ship often exhibits even now, notwithstanding the passenger law. What the purpose of his coming is, we may not presume to judge. But we can see much good already resulting from it—good to the negro, in his improved condition; to the country whose rich fields he has cleared of the forest and made productive in climates unfit for the labour of the white man; to the continent of Africa in furnishing, as it may ultimately, the only means for civilizing its people.

The end of slavery then would seem to be, present good to the slave himself, to the country in which he labours and the world at large, and future good to his race. Whether Mr. Clarkson or Lord Carlisle approve or disapprove of the mode in which it has pleased divine Providence to bring all

this about, the event will probably be the same. It may be doubted whether these gentlemen and their friends could have administered the affairs of the world more wisely, whatever our opinion may be of their wisdom or benevolence. As they will never have the power to try, this must remain among the other unsettled questions that perplex the ingenuity of mankind.

There is, however, a plain, practicable mode in which these anti-slavery zealots may confer freedom on thousands, year after year, without offence to any party. The plan is simple and easy. Let them show their sympathy for the negro, not by eloquent speeches, but more eloquent acts; not with sentiment, but with sovereigns. They can buy any number of negroes and carry them where they please. For such a purpose their government would not object. Efficient laborers are wanted in the West Indies. Here is a ready way to procure them. They may, in this manner, bestow freedom on many of the slaves of America, confer a benefit on their colonies, and gratify their own excited sensibilities with something more than unprofitable words. They feel profoundly for the negro, let them feel to the amount of a million a year. This would be better than bringing coolies from Asia, and negroes from Africa, by a system of very doubtful character. It would convince the world that their sympathy is an honest one, and not the offspring of vanity or arrogance.

An ingenious lady of South Carolina, in a very admirable letter, has made a similar proposal to the Duchess of Sutherland. But her grace is a near relation of the priest, in the fable, who refused a half crown to a supplicant, but was ready enough to give him a blessing. The abolitionists all belong to this benevolent class of world-menders, who are willing, at all times, to help everybody, if it cost them no more than pretty phrases.

In the remarks made in reference to the condition of the hireling in Europe—of England especially—I have no feeling but compassion for the unfortunate paupers, and intend no reproach to their country. I venerate England as the great mother of nations, as our teacher in law, literature, civil and political liberty. The facts relating to the poverty, vice, brutality, and ignorance of the British laborer are taken, as may be seen in the notes attached, from English authorities—they can be multiplied a hundred fold. In adverting to them, I have merely desired to show that there is a poor and suffering class in all countries—the richest and most civilized not excepted—laborers who get their daily

bread by daily work, and that the slave is as well provided for as any other. The poor we shall have with us always, and whether the poor hireling or the poor slave is most the object of pity, or subject of distress, is the only question proposed, and the true one at issue.

In comparing their several conditions no contempt is implied, certainly none intended, for the situation of the hireling poor. All honest labor is worth of honor—that of the faithful slave not less so than any other. Moralists are accustomed to weigh the advantages and evils of the highest and lowest, the palace and cottage—what forbids us to do so with the good and ill of the two humblest stations of civilized life?

It may be thought unnecessary to invite public attention again to the subject of slavery. But if the subject be trite, it is also of incalculable and unceasing interest. I have endeavored to diversify the mode, if not the matter, of the argument, by throwing the remarks offered into verse. I have done so, not only for the reason assigned, but with the additional purpose of offering some variety to the poetic forms that are almost universally prevalent. The poetry of the day is, for the most part, subtle and transcendental in its character. Every sentiment, reflection, or description is wrought into elaborate modes of expression, from remote and fanciful analogies. The responses of the muses have become as mystical, and sometimes as obscure, as those of more ancient oracles, and disdain the older and homelier forms of English verse.

It has occurred to me that a return to the more sober style of an earlier period may not be an unreasonable experiment on the public taste. The fashion in dress and furniture, now and then, goes back a century or two, why not the fashion in verse? The school of Dryden and Pope is not entirely forgotten. May we not imitate the poetry of Queen Anne's time as well as the tables and chairs? The common measure of that period, applied to a didactic subject, may diversify the dishes presented to the public and provide for its appetite the same kind of relief that bread and butter or beef and pudding would offer after a long indulgence in more refined and elaborate dishes. The most fastidious appetite may tolerate an occasional change of diet, and exchange dainties for plainer fare.

THE INDIAN AND THE SLAVE----THE PARALLEL, ETC

To other griefs that changeful life supplies,
Griefs of a race, awakened Memory flies,
And backward as she turns her thoughtful view,
The vanished Indian seems to live anew;
Low voices whisper round from stream and bay,
The mournful tale of nations passed away;
And names, like spirits of the buried race,
Of plaintive sweetness, tell their dwelling place;
On every isle, in every field and wood,
Shells show, in heaps, where once the wigwam stood;
Spear points of flint and arrow heads are found,
Fragments of pottery strew the haunted ground,
And barrows broad, with ancient trees o'erspread,
Still hold the relics of the warrior dead—
Relics of tribes and nations that of yore
Welcomed the Saxon stranger to the shore;
Then masters of the land, with matchless skill,
They chased the deer, by valley, plain and hill,
Through gloomy forests sought a nobler game,
And won, with pride, the warrior's sterner fame;
Where moose and elk, their fragrant forest home
In wastes of fir by Madawaska roam;
Where, on his breast, Potomac loves to trace
The Patriot's home and hallowed resting-place;
In quiet beauty, where Saluda flows;
Catawba rushes from his mountain snows;
Through the lost Eden of the Cherokee,
Where Tallapoosa seeks the Southern sea;
Where slow Oscilla winds his gentler tides,
By cypress shadow where Suwannee glides;
Where, crowned with woods, the Apalachians rise,
The Blue Ridge blends its summit with the skies,
Long rolling waves break foaming from the deep,
And Erie's ocean thunders down the steep;
Lords of the lake, the shore, the stream, the wood,
Painted and plumed, the giant warriors stood,
With presents filled the feeble stranger's hand,
And hailed his coming to the red man's land;
Now from these homes expelled, in seeming rest,
A hopeless remnant, cowering in the west,
They linger till the surge of millions come
To sweep them headlong from their transient home:
Vainly the gentle wish, the gen'rous strive
To save the helpless wanderers that survive,
Lure them from sloth, from ignorance and strife,
And make them learn the social arts of life;
In vain, with adverse will, the Indian tries
To win the bread that toil or art supplies,
Like their wild woods, before the Saxon's sway,
The native nations wither and decay;
The same their doom, where wars the forest sweep,
Like winter torrents rushing to the deep,
Or where the tides of peace more slowly eat
As sure a passage to their last retreat;
Where'er their lot, with Puritan or Friend,
Friendship and hatred bring one common end;
Chieftain and brave have vanished from the scene,
And Memory hardly tells that they have been.
Such, too, the fate the negro must deplore,
If slavery guard his subject race no more,
If by weak friends or vicious counsels led
To change his blessings for the hireling's bread.

Cheated by idle hopes, he vainly tries
To tempt the fortune that his strength denies,
Quits the safe port, deserts the peaceful shore,
An unknown sea of peril to explore;
Hard the long toil the hireling bread to gain,
Slight is his power life's battle to maintain;
And war's swift sword, or peace, with slow decay,
Must, like the Indian, sweep his race away.
Swift is the doom, where temperate climes invite
To fruitful soils the labors of the white;
Where no foul vapour taints the morning air,
And bracing frosts, his wasted strength repair;
Where Europe's hordes, from home and hunger fled,
Task every nerve and ready art for bread,
Rush to each work, the calls for labor yield,
And bear no sable brother in the field;
There in suburban dens and human sties,
In foul excesses sunk, the negro lies;
A moral pestilence to taint and stain,
His life a curse, his death a social gain;
Debased, despised, the Northern Pariah knows
He shares no good that liberty bestows;
Spurned from her gifts, with each successive year,
In drunken want, his numbers disappear.
In tropic climes, where Nature's bounteous hand
Pours ceaseless blessings on the teeming land,
And with the fruits and flowers that she bestows,
Fierce fevers lurk, the white man's deadliest foes,
More safe the negro seems—his sluggish race
Luxuriates in the hot congenial place—
A Lotus bearing paradise, that flows
With all the lazy joys the negro knows;
Where all day long beneath the Tamarisk shade,
Stretched on his back in scanty garb arrayed,
With sated appetite, in sensual ease,
Fanned into slumber by the listless breeze,
A careless life of indolence he lives,
Fed by the fruits perpetual summer gives:
Yet here, unguided by Caucasian skill,
Unurged to labor by a master will,
Abandoned to his native sloth that knows
No state so blest as undisturbed repose,
With no restraint, that struggling virtue needs,
With every vice, that lazy pleasure breeds,
His life, to savage indolence he yields,
To weeds and jungle, the deserted fields;
Where once the mansion rose, the garden smiled,
Where art and labor tamed the tropic wild,
Their hard wrought trophies sink into decay,
The wilderness again resumes its sway,
Rank weeds displace the labors of the spade,
And reptiles crawl where joyous infants played.
Such now the negro's life, such wrecks appear
Of former affluence, industry, and care,
On Hayti's plains, where once her golden stores
Gave their best commerce to the Gallic shores;
While yet no foul revolt or servile strife
Marred the calm tenor of the negro's life,
And lured his mind—with mimicry elate
Of titled nobles and imperial state—
From useful labor savage wars to wage,
To glut with massacre a demon's rage,
Forget the Christian in the pagan rite,
And serve a negro master for a white.

But even in climes like this, a fated power,
In patient ambush, waits the coming hour,
When from their hovels war and want shall drive
New hordes of hunger from the swarming hive,
And Europe's multitudes again demand
Its boundless riches from the willing land
That now, in vain luxuriance, idly lies,
And yields no harvests to the genial skies;
Then shall the Ape of Empire meet its doom,
Black peer and prince their ancient tasks resume,
Renounce the mimicries of war and state,
And useful labor strive to emulate,
Why peril then the negro's humble joys,
Why make him free, if freedom but destroys?
Why take him from that lot that now bestows
More than the negro elsewhere ever knows—
Home, clothing, food, light labor, and content,
Childhood in play, and age, in quiet spent,
To vex his life with factious strife and broil,
To crush his nature with unwonted toil,
To see him, like the Indian tribes, a prey
To war or peace, destruction or decay?
Not such his fate, Philanthropy replies,
His horoscope is drawn from happier skies;
Bonds soon shall cease to be the negro's lot,
Mere race distinctions shall be all forgot,
And white and black amalgamating, prove
The charms, that Stone admires, of mongrel love;
Erase the lines that erring nature draws
To sever races, and rescind her laws;
Reverse the rule that stupid farmers heed,
And mend the higher by the coarser breed;
Or prove the world's long history false, and find
Wit, wisdom, genius in the negro mind;
If not intended thus, in time, to blend
In one bronze colored breed—what then the end?
What purposed good, like that which brought before
The Hebrew seer to Nile's mysterious shore,
Brings the dusk children of the burning zone
To toil in fields and forests not their own?
They come where summer suns intensely blaze,
And Celt and Saxon shun the fatal rays;
Where gay savannas bloom, wild forests rise,
And prairies spread beneath unwholesome skies;
Where Mississippi's broad alluvial lands
Demand the labor of unnumbered hands,
With promised gifts, from endless hill and vale,
From field's whose riches mock the traveller's tale
Where nature blossoms in her tropic pride,
All bounties given, but health alone denied;
They come to cleave the forest from the plain,
From the rank soil to rear the golden grain,
The wealth of hill and valley to disclose,
Make the wild desert blossom as the rose,
To all the world unwonted blessings give,
The naked clothe, and bid the starving live;
Where Amazon's imperial valley lies
Untamed and basking under tropic skies
They come, his secret treasures to unfold—
Spices, and silks, and gems, and countless gold;
For fields of cane, his matted woods displace,
For flocks and herds exchange the reptile race
With tower and city crown the ocean stream,
And make his valley one Arcadian dream.

Slaves of the plough—when duly tasked they bring,
Like the swart genii of the lamp and ring,
Their priceless gifts—their labors yield in time,
Unbounded blessings to their native clime;
Though round it, darkly, clouds and mists have rolled
Of sloth and ignorance, for years untold;
Still, in the future, faith's prophetic eye,
Beyond the cloud, discerns the promised sky;
See happier lands their sable thousands pour,
Missions of love, on Congo's suppliant shore,
Skilled in each useful civilizing art,
With all the power that knowledge can impart,
O'er the wild deep, whose heaving billows seem
Bridged for their passage by assisting steam,
To Africa, their fatherland, they go,
Law, industry, instruction, to bestow;
To pour, from western skies, religious light,
Drive from each hill or vale its pagan rite,
Teach brutal hordes a nobler life to plan,
And change, at last, the savage to the man.
Exulting millions, through their native land,
From Gambia's river, to Angola's strand,
Where Niger's fountain head the traveller shuns,
And mountain snows are bright with tropic suns,
See spreading inward from the Atlantic shore,
Industrial skill and arts unknown before;
Through their broad vallies populous cities rise,
With gilded domes, and spires that court the skies,
Forests, for countless years the tiger's lair,
Yield their glad acres to the shining shear;
Where once, along the interminable plain,
The weary traveller dragged his steps with pain,
In iron lines continuous roads proceed,
And steam outstrips the ostrich in its speed;
Timbuctoo's towers and fabled walls, that seem
The fabric only of a traveller's dream,
Spread a broad mart, where commerce brings her stores,
Of gems and gold, from earth's remotest shores;
Wealth, art, refinement, follow in her train,
Learning applauds a new Augustan reign,
To tropic suns her fruits and flowers unfold,
And Lybia hails, at last, her age of gold.
For these great ends hath Heaven's supreme command
Brought the black savage from his native land,
Trains for each purpose his barbarian mind,
By slavery tamed, enlightened, and refined;
Instructs him from a master race to draw
Wise modes of polity and forms of law,
Imbues his soul with faith, his heart with love,
Shapes all his life by dictates from above,
And, to a grateful world, resolves at last
The puzzling question of all ages past,
Revealing to the Christian's gladdened eyes,
How gospel light may dawn from Lybia's skies,
Disperse the mists that darken and deprave,
And shine with power to civilize and save.
Let then the master still his course pursue,
"With heart and hope" perform his mission too;
Heaven's ruling power confest, with patient care,
The end subserve, the fitting means prepare,
In faith unshaken, guide, restrain, command,
With strong and steady, yet indulgent hand,
Justly, "as in the great Taskmaster's eye,"
His task perform—the negro's wants supply;

The negro's hand to useful arts incline,
His mind enlarge, his moral sense refine;
With gospel truth his simple heart engage,
To his dull eyes unseal its sacred page,
By gradual steps, his feebler nature raise,
Deserve, if not receive, the good man's praise;
The factious knave defy, and meddling fool,
The pulpit brawler and his lawless tool,
Scorn the grave cant, the supercilious sneer,
The mawkish sentiment, and maudlin tear;
Assured that God all human power bestows,
Controls its uses, and its purpose knows,
And that each lot on earth to mortals given,
Its duties duly done, is blest of Heaven.

UNIVERSITY OF VIRGINIA.

The prosperity of this institution, says the *Southern Times*, is one of the most gratifying instances of southern progress. It has risen rapidly, within a few years past, in public favor as well as State estimation, and we doubt if it has now, all things considered, its superior in the country. Located in one of the finest sections of the land, where the natural and social advantages are unsurpassed, it has now become one of the most prominent and valuable schools within reach of southern young men. We have been pleased to note in several northern papers a recognition of the unusual merits of this institution, and especially their appreciation of its moral advantages. Few schools can compare with it in this particular. Of late years, a large proportion of the students have been young men of decided moral or religious character. Reliable men have informed us, that the best social influences prevail in the institution and that the deportment of the students is much above that of most of our colleges.

We give an extract from a long article about the University in a leading New York journal:

Of the 466 students attending the university, you will observe that a little less than *two-thirds* are from Virginia, and that of other States, South Carolina and Alabama are the largest contributors. This, I observe, was also the case in '51-'2, and '52-'3.

The impression used to exist—and still exists to some extent—that an *irreligious influence* was exercised at the university. And it is only within a few years that a professor from a southern college received from me, with great apparent incredulity, the statement that there was nothing at the university of the irregularity, or violence, or disorder which he seemed to think prevailed there. He seemed to have an impression that shooting the professors was a very frequent event, and that mobs snd insurrections occurred as often as in Mexico. I think I may safely say, that I doubt if so much good order prevails at the great majority of colleges in the Union as is found at the university. With four or five hundred students—all living almost *en masse*—one-third of them from the extreme south and far from home—coming to Virginia rather through form than (in general) with the idea of studying—any disturbance at this institution is the rarest thing. Not only is any act of violence uncommon, but in the adjoining village—which in the way of noise and nocturnal uproar, lies at their mercy—any noise in the streets is extremely unfrequent.

AGRICULTURAL AND HORTICULTURAL JOURNAL.

GUANO.

BY CHARLES COLBY.

The present annual importation of guano into the United States amounts in value to about $10,000,000. This article has become one of general use by farmers and gardeners. Since its character as a most valuable fertilizer has become firmly established, various attempts have been made to manufacture compounds of similar properties; and we think that the impression widely prevails that these artificial products have also proved themselves to be capable of regenerating worn-out land, or at least improving it. This has been the case only to a limited extent. Many farmers who have tried these "fertilizers" have abandoned them, and now use guano in addition to ordinary manure. We learn from the best authority that the annual consumption of Peruvian guano alone is three times as great as the aggregate consumption of all kinds of manufactured fertilizers, some of which are undoubtedly valuable, but none can supersede guano.

The word "guano" is a corruption of the Spanish "huano," itself a corruption of the Peruvian word "huanu;" signifying excrement. It was used as a manure in the time of the Incas, and the Spaniards learned its use from the Peruvians. The chief source from which the article now in commerce is taken is the Chincha Islands, off Peru. There, immense deposits have been formed through many centuries by countless flocks of seabirds, which still frequent the islands, but not in such numbers as formerly—the great concourse of ships having driven most of them away. These deposits are regularly stratified, and are of a dark reddish color, but lighter on the surface. Under the sun-baked crust of the surface the birds scratch deep oblique holes in which they lay their eggs, so that the upper layer thus has a completely honey-combed appearance. Guano also contains decomposed egg-shells, and the bones and remains of fish, brought by the old birds to their young. The Chincha article is considered the best on account of its extreme dryness, as the rain never falls upon those islands. But there are many other localities whence guano is or may be obtained. Such are the islands directly south of the Chinchas, Battista and San Gallen; the Lobos islands; various points along the coasts of South America and Mexico; the Triangle Island, near Yucatan; Bird Island, west of Gaudaloupe; different parts of Africa, &c.

The Chinchas are a group of three islands in the Bay of Pisco, on the coast of Peru, much alike in their general formation and appearance, lying nearly north and south, and separated by channels about one mile in breadth. They are naturally bare rocks, without a sign of vegetation of any sort. The northern island is somewhat the largest of the three, which average two miles in circumference. Each presents the appearance of a flattened cone, the rocky inequalities of the original surface having been filled up and covered with the guano, the cuttings of which vary in depth from a few inches to a hundred feet. Their upper surfaces are from 100 to 150 feet above the water. Around their bases little promontories jut out, in which the washing of the sea has formed many caverns—the resort of sea-lions; and whales are frequently seen gamboling about the islands. The eastern side of each is a perpendicular wall of rock, from the edge of which the guano slopes toward the centre of the island, which is a rocky elevation; and from this point there is a gentle slope to the western shore, the guano continuing

to within a few feet of the water. The steepness of the cliffs that form the shore and the great depth of water (seven fathoms close in) afford great facilities for loading vessels.

The mode of loading is usually as follows: A ship first takes in by her boats enough guano to ballast her, and approaches to a point of the coast where the remainder of the cargo is shot down the cliff into the hold of the vessel. Some vessels (chiefly the smaller ones) load entirely from boats. On the top of the cliff are deep bins containing from 100 to 500 tons of guano, made of long poles firmly bound together and interwoven with ropes and chains. These are wide and open at the top, but diminishing in size toward their lower end, which is on the extreme edge of the precipice. To this is fitted a canvass chute or pipe, two feet in diameter, which extends down 100 feet to the deck of the ship. Through this chute the guano passes in a continuous stream of tremendous force, at the rate of from 100 to 400 tons per day. The bin is filled by Chinese coolies and the Peruvian convicts. A year since there were about 300 of the former, but their number was then rapidly diminishing by ill treatment. Each man is compelled to bring to the chute five tons daily, and if he fails to do so he is punished by negro drivers with the whip. The barbarity used towards these coolies, who were enslaved by treachery, is almost unparalleled. There are about 100 of the convicts.

It is only about twelve years since these deposits became of commercial importance; and in this period they have proved a source of great wealth to the government of Peru, which is now the most prosperous of all the South American republics. The amount of its revenue from this source for 1854 and 1855, as stated in the last Treasury Budget, is estimated at $8,600,000. It sells the privilege of loading vessels for about $19 a ton. There are frequently over one hundred vessels engaged in loading at the same time, and as each vessel receives but one "measure" at its "turn," the period occupied in loading is several weeks. The following is the official report of the total amount of deposits on these islands. In the fall of 1853 the Peruvian government employed a corps of engineers, headed by Mr. Charles Paraguet, to measure their areas; and their reports were printed in London, with lithographic illustrations. Of this return we have this summary:

	Tons of measurement.
On the northern island	4,189,477
On the middle island	2,518,948
On the southern island	5,689,675
Total	12,376,100

This is to be increased one-third as the difference made by breaking it up and forming tons of weight, as shipped, or in all 16,501,466 tons. This is probably a correct estimate, and shows that previous estimates were too large.

The total quantity exported is not definitely known. The greatest quantity has been taken from the northern island; the middle island has been moderately worked; and the southern island which is the most difficult of access, has scarcely been touched. The following is a semi-official statement of the exports in three years:

	1850.	1851.	1852.
To England, tons	102,421	150,653	160,000
To the United States, tons	14,250	38,371	32,000
To France, &c., tons	1,681	.....	28,500
Total	118,352	169,024	220,500

Since 1852 our trade in the article has become equal to that of England, and is likely to exceed it hereafter.

The whole amount of guano imported into England from 1841 to 1852, both

inclusive, was 1,258,107 tons, as shown by the following statement, in which the imports from Peru are separately given:

Year.	From Peru.	Other countries.	Total.
1841	The statistical details of these years are not at hand.		2,881
1842			20,398
1843			30,002
1844			104,251
1841–'4			157,532
1845	14,450	268,850	283,300
1846	22,410	66,793	89,203
1847	57,782	25,630	83,392
1848	61,055	10,359	71,414
1849	73,567	9,871	83,438
1850	95,083	21,842	116,925
1851	199,732	43,282	243,014
1852	86,293	43,596	129,880
1845–'52	610,352	490,223	1,100,575
Total importation 1841–'52			1,258,107

For the year 1849 we have the particular statement of the several countries from which importations were made, as follows:

Name of countries.	Tons.	Name of countries.	Tons.
Africa, West Coast	2,345	Patagonia	1,945
Africa, East Coast	1	Chili	4,311
Cape of Good Hope	767	Peru and Bolivia	73,567
Norway	25		
France	477	Total tons	83,438

The following table presents the guano trade of the United States for the last six fiscal years, each ending 30th June:

Years.	Total Imports.	Total Exports.	Home consumption.
	Tons.	*Tons.*	*Tons.*
1848–'49	21,243	3	21,240
1849–'50	11,740	4	11,736
1850–'51	97,881	1,128	96,753
1851–'52	50,054	430	49,624
1852–'53	38,034	348	37,686
1853–'54	175,849	386	175,463
1848–'54	394,801	2,299	392,502
Yearly average	65,800	383	65,417

The countries from which the principal importations were made during the last three fiscal years were:

Name of countries.	1851–'52.	1852–'53.	1853–'54.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*
Peru	39,567	25,852	163,662	229,081
Chili	1,710	2,134	.....	3,844
Buenos Ayres, &c	220	.....	60	280
Uruguay	1,345	320	.....	1,665
Brazil	1,928	708	798	3,434
South America generally	4,281	1,530	.....	5,811
New Granada	.....	200	4,487	4,687
British North America	577	6,876	.....	7,453
Africa	.....	148	502	650

Next to this city, Baltimore is the chief place of guano importation, which for 1854 (calendar year) amounted there to 60,000 tons, valued at $3,000,000. The present price of $50 a ton has been constant for a year. In January, 1854, it was $41, but by subsequent rises of $4 in February and $5 in May, it attained its present rate. So far the demand has been rather greater than the supply. Last year the supply was quite inadequate.

Large deposits of guano are found on many of the rocky islands along the coasts of South and Central America, and elsewhere, and on the coasts themselves. The value chiefly depends on the dryness of the locality. For this quality, that of the Chincha islands has not yet found a competitor. Very positive statements have been made in regard to the virtue of some other kinds of guano, but have not resulted in bringing them into general use.

The Gallepagos Islands lie in the Pacific Ocean, directly on the equator, and some 650 miles west of Ecuador, South America. These numerous islands are frequented by myriads of aquatic birds, and their shores abound in tortoises. A sample of the guano derived from the former has lately been analyzed by an eminent chemist, who pronounces it equal to the best Peruvian, as it contained 15.59 per cent. of ammonia.

Of the Mexican guano, 5,590 tons were imported into the United States in the year ending June 30, 1854; and a much larger amount was sent to England. A year or more since, the Mexican government granted to a company the exclusive exportation of all that belonged to Mexico, except that on the "Three Marias" islands on the Pacific side, which is particularly abundant. On the eastern coast, the chief islands of this character are the "Triangles," near the coast of Yucatan, from which several American vessels obtained cargoes before the locality was known to the Mexican government. Whether this is the kind now sold in this market as "Mexican," we cannot ascertain, but one thing is certain, it is a drug at $30 or even $25 a ton.

The "Bird Island" variety, which has been known but a year or two, has been represented as even more valuable than the Peruvian. The last statement of this character was given by *The Washington Union* of the 10th inst., which gives as its authority the new Agricultural Report of the Patent Office. It says: "From careful analysis it has been ascertained that this substance is by far the richest source of phosphoric acid for the farmer yet discovered, as it contains 84 per cent. of dry superphosphate of lime, or about one-third more than pure ground bones." This does not seem likely to be the case, and *The Union's* statement gives other evidence of probable inaccuracy. Several cargoes of these descriptions have been obtained by American vessels, but where they disposed of it is uncertain. Bird Island is one of the West Indies, some 70 miles from Guadaloupe, in latitude 15° 40′ 40″ north, and longitude 63° 36′ west. It is only a small, barren, rocky island of one mile in length. On August 1, 1854, Commodore De Horsey, of the British navy, visited it, when he "found three vessels, under American colors," then loading; and he states, in his letter to the Admiralty, that the island "has 200,000 tons of guano, but slightly inferior to the Peruvian." If such is the case, it affords a good field for our enterprising importers.

STATE AGRICULTURAL SOCIETIES.

In advocacy of a State agricultural society in South Carolina, A. G. Summer, esq., thus writes:

South Carolina is not even stationary in her industrial pursuits. She is actually and rapidly retrogading. Her old fields are enlarging, her homesteads are decreasing in numbers, her factories are standing idle, or languishing for want of home patronage; her stock is dwindling into ghostly anatomies of vital semblance, and her sons of energy are seeking the more remunerating, hence more genial, fields of the southwest, upon which industry smiles by the sweat of the face of labor. Nor are we alone losing white population; slave population, the true wealth of the State, will soon become stationary, in point of increase, within her borders, by the colonization and occupation of the rich planting lands of those favored regions. Should this be? Is old South Carolina still to furnish the elements of mind and labor to the fruitful forest lands, in which now the spirit of the wilderness reigns? It is true our soil is poor—poor and unfertile—from that careless system of indifference which caused our people to contemplate its gradual and certain determination, with no foresight for their future—*which is our own*. That glorious west, with soil as deep as its extent of acres was broad, stretched out, in valley and prairie, many thousand hands, to bid them welcome. Sylvan retreats induced expatriation, and the ties of fatherland, of kindred, and of hallowed association, were cast as sacrifices upon the altar of Mammon. We have had enough of this in our State. We must no longer encourage the departure of the flower of our land; but, by developing a spirit of improvement, and thereby increasing attachment to our homes, make the sons of Carolina proud to linger and to labor upon their native soil. How important in this great work would be the workings of a State Agricultural Society! It would give a successful impulse to this spirit of improvement, and the easy and accessible routes of public travel would impress all persons visiting its annual fairs with the advantages which we enjoy over many sections boasting of richer and more productive soil. As long as our people consider that other sections of the country possess greater natural advantages than they do, they will continue restless and dissatisfied. This feeling of dissatisfaction is incompatible with a spirit of improvement, for men will not bestow time and labor upon the preservation of land which they expect to abandon. Anxiety to move—even if it be, like the terrapin, with all his wealth upon his back—becomes the predominant feeling, and the good work stands still. It should be our province to convince the people of the State that all our lands are valuable and desirable; and if we do this, the work of improvement will then manifest itself. Are not all the lands in middle and upper South Carolina valuable? Compare their enhanced price with former valuation—look at the comforts enjoyed by our citizens, where they have health, pure air, crystal water, and contrast these with the bayou, mosquitoes, cholera and yellow fever, which scourge the southwest. Look, too, at the facility with which the rapidly multiplying lines of railroads here convey the products of the soil to market—and think of some of our old friends out west, who, because their magnificent rivers don't happen "to rise," suffer for the business, and even the common necessaries of living. Are not all these things worthy to be weighed in the balance of life? When life, too, is so short, and its rational pleasures, at best, and under the most favorable circumstances, may be compared to a cup of bitter waters, sweetened with but few indulgencies and little satisfaction. Here, where every man is near to the highways of the world—whereby business or pleasure finds an easy transit to distant points—where honesty is still respected and virtue admired, revered, and cherished—here, say we, is the land in which to build and beautify homes—here to cherish those we love—here to do one's part in the brunt of life's ever active battle—here to lay our bones beside the honored graves of our fathers.

Yes, gentlemen, we believe that the institution you propose will in a great measure controvert the evils and injuries done to the State, from the causes adverted to above; but, to do this successfully, requires great energy, labor and foresight. Our old State Agricultural Society was ridden to death, in connexion with aspirations for office. Poor old horse, and rider too, may you rest in peace. We have no purpose which the resurrection of your almost forgotten existence would serve. It was a gas society, which, like all existences of allotted periods lived its time and was no more.

The objects of a State agricultural society should be of a higher aim than to elevate any one connected with it save in the legitimate pursuit of an industrial calling. To merely benefit the recipients of premiums, is not alone the object for which such rewards are offered. The premium is only the active agent which puts vitality into exertion, and inducing competition, thus elevates the mass of observers to the same perfection in theory and principle, which the successful exhibitor has attained and developed to the satisfaction of the society. Its influence does not stop here; but observers take home the lessons which their eyes have stored up, and conversations and discussions will follow, setting inquiry on foot, and benefitting ultimately scores who never visit such rural jubilees.

Here the best breeds of animals can be inspected, and the proper selections made, without running the risk of a venture which might be unsuited to our climate and modes of feeding. The most valuable and best adapted grain and vegetable products, with the most successful and economical modes of culture, would be before the eye of those who wished improvement in this line. The exhibition of the domestic and manufactured fabrics of the State would give lessons to the different sections, which could not fail in being profitable. The neat handiwork of the fair sex, always gracing such exhibitions, like the light clouds which veil heaven from our gaze, are great exemplars, and the tasty patterns are speedily disseminated into the most remote hamlets and rural homes. The arts in taste, mechanics, and every class of enobling toil, will bring their useful specimens, and labor-saving implements and machinery will be ready to aid the toiler to enlarge his operations with remunerating influence. Not to such things alone do we look for all the improvement; but a society, properly regulated, soon disseminates a mass of valuable information, which will be reliable text upon which to predicate future action. The genial intercourse between all parts of the State, the instructive interchange of opinions upon all matters of industrial improvement and progress, would alone compensate for the erection of the proposed association, independently of the solid advantages which would accrue to those who went into it, in order to benefit the country, whilst they inform themselves.

The management, details and arrangement of raising the means, proper location, and other incidentals, are important matters to be looked into; but I would extend the limits of this communication too far, were I to give you my particular views upon these things. My whole heart and exertions shall be with you, and I hope to see the true "bone and sinew" of the State in the Capitol, on the second Wednesday of August next. Let the people from every nook and corner send up delegates, and where none are appointed, let public-spirited men "come up on their own hook." Every man counts one in this work, and all will be welcomed in the spirit of brotherhood.

THE DIFFERENT VARIETIES OF COTTON SEED.

There are those who ridicule selling improved seed, but they will plant such if given; others ridicule to be thought of the prudent sort of folk. Every one to his notion. In 1833, or about—for it was in '32 or '33—there were those who ridiculed my trying to get up a better seed; they were only my second neighbors. This class has greatly increased, and even improving men lend themselves to this cant. My improving was only intended for home consumption, and would have so continued, had not an estimable friend, an old schoolmate, insisted, if I desired to benefit planters, that I could do more by selling seed, than any other way. He had tried seed grown here, perhaps two years, being sent to him as an old and cherished friend. Others enquiring, put me in the way of selling seed. Of this it matters not; a planter might as well sell seed of corn, oats, &c., as cotton. It is all sheer ruffle-shirt cant, to ridicule selling anything a man has to spare. To cull seed carefully, cure them properly, attend to correspondence, and all the little perplexities, as well as the loss to be incurred if a full crop is not made, is not very satisfactory to one, unless the almighty dollar has complete possession of him. At least, I am willing to quit the business. Some years ago, I offered a near neighbor, and a dear friend, all my improvement, if he would take the trouble off my hands; and I will do so to any planter who will assure me of his devotedness to this matter. The man who is governed only by cent. per cent., will not do. I plant this year near 200 acres, or perhaps over, of select seed. I

think I make by it; selling seed is too small a business—yet to be called the "celebrated cotton man of Edwards, Mississippi," is enough to induce any one to persevere.

All this by the way. Ridicule may turn some men from principle; it only has the effect on myself to let the writers and speakers see, though not felt, it is not because of want of perspecuity.

We will plant as nearly an entire crop as we have good seed, with the "Cluster" cotton seed; this is the original name, but known now by as many names as there are persons who desire to make money by selling seed. We will plant "Silk," (called "McBride" by some,) "100 Seed," "Sugar-Loaf," "Dean," and small parcels of others. The "Cluster," or "Banana," has been much improved. The best now on sale is "Boyd's Prolific." From this I have culled very carefully for three years, I think, and by way of keeping solely for home use, I call them "Home-seed." Many who have seen this selection, deem it better than the original accidental variety, for I learn from Mr. Boyd that it was an accidental stalk. "Silk" is perhaps better for all descriptions of land; many of my friends prefer it to "Banana," objecting to the latter on poor and on rich fresh land; on the first, the forms dry up; on the latter breaks down—this latter can be remedied by topping, say one to two feet off. "Sugar-Loaf" is best upon new ground, rich sweet gum land. I have made over 41,000 pounds the first year land was cleared, from 24 acres of land. "100 Seed" still retains its position on rich fresh land.

Of the "Jethro," several have enquired of me if I knew it. I reply: In the winter of '46-'7, Col. H. W. Vich sent me eight small parcels of cotton in the seed, and asked my examination and experiment. They were endorsed thus: "100 Seed," "Lintonia," "Diamond," "Original Stock," "Seed taken at random from a pile," "Belle Creole," "Not a distinct variety, but inclining to Silk," "8 Locks of the small Diamond," very valuable, "Sub Ingri." These were planted 23d April, 1847, hoed and picked by myself, no one permitted to touch, except ploughing. From the 7th variety, "Inclining to Silk," I selected what I deemed best in the lot. I sent a few seed to J. H. Hammond, ex-governor of South Carolina, and J. V. Jones, of Georgia. The latter brought it into notice, and I named it, in compliment to him, "Jethro."

The history is comprised in a line. Colonel Vich sent me a few seed, not a half pint; I planted and worked the crop. J. V. Jones made it tell. To the latter is due the credit, and so let it rest.

The Dean cotton was sent me about five years ago. I think, as "Santa Maria," by a warm and devoted friend to agricultural improvement, C. B. Stuart, of Texas, from who I have received many kind, similar favors. The production was so meagre, that I discontinued the culture. After it had attracted attention, by 15 and 16 cent price, he again sent me some, and Milton Cabeen, a personal acquaintance and friend, procured me a few seed from Mr. Dean himself. The yield is not one half of my "Banana," but the staple is excellent. Having been so unfortunate as to make all my crop ordinary to low middling, and getting some 7 to 8 cents, I concluded to make a better article, and now plant all my Dean seed. Silk and Banana yield about the same pure gin stand—say 31 per cent.—ginning out 500 to 1,000 pounds. These yield more lint than any other variety I have tried.

One word as to selecting seed. A contributor of yours from Texas is very correct as to the plan to be followed in making the best seed. It is what all planters should do who desire to promote our cause. There is something else needed, and more than one in a hundred possess. Not alone the desire and care, but discrimination, judgment. We can tell that one article is not good, productive, &c., but to select the best is difficult. Frankly do I confess to the want of that faculty, and have therefore preferred to rely upon the selection of others and to labor to keep up that quality. It is sometimes good economy to buy a pair of pigs, even at $50, than to spend time and means to bring up to same perfection. This no one can deny. Why not the same of cotton, corn, oats, &c. It is the duty of every planter to strive to add to the knowledge and resources of our cause. We may fail, but the reward is sure—honest intention. Yours, &c.

M. W. PHILLIPS.

EDWARDS, MISSISSIPPI, *April* 10, 1855.

EFFECTS OF EMANCIPATION.

EFFECTS OF EMANCIPATION—EXAMPLES OF HAYTI, JAMAICA, ETC.

Why is it that our abolitionists and would-be-thought philanthropists of the north are apparently so ignorant of the practical effects of emancipation, and the misery that has resulted therefrom by unwise legislation and blind fanaticism?

Why do they not, instead of standing afar off from these "benighted people," advocating chimerical dogmas, go among them, and by teaching prepare them to occupy a more exalted position, if they are really capable of so doing, as they would have us believe? Is there not field enough for them in Liberia, in Jamaica, and the Danish islands, instead of creating discord at home; and, above all, in Hayti, once the "Queen of the Antilles," and now a mass of corruption, abounding in all that is revolting to civilized and refined minds, both morally and intellectually?

This island has, since the revolt of the blacks in 1792, been steadily retrograding, with the exception of during Boyer's administration, and even then it made no advancement, no progress. There is not a parrellel case in the annals of history where the people starting, as the blacks did in Hayti, by conquering a country the richest and most productive in the world of its size, that has sunk in so short a time into absolute poverty.

In 1789 there were, according to reliable statistics, exported 141,000,000 pounds of sugar, and the export of coffee was 76,835,219 pounds; of cotton, 7,004,274 pounds; of indigo 758,628 pounds; and the abundance of luxuries produced enabled the inhabitants to live in a style unequalled elsewhere, even in the tropics.

Before I speak of the present condition of the island, let me repeat an anecdote in illustration, related to me while there not long since by an old resident, an American by birth, who has lived long enough among them to become impoverished like the rest.

He was formerly a merchant, having frequently as many as a dozen vessels in port to his own consignment. Some twenty years since, at a dinner party given by him, on the anniversary of our independence, to the American merchants and shipmasters in port, he spoke of the changes that had already taken place, and among other things, remarked that he expected to see the day when, instead of sweetening their coffee with the sugar produced on the island, as they were then doing, it would be done with sugar imported from the United States. The remark was received with loud acclamations as a good joke, for my friend had the reputation in those days of being somewhat of a humorist. Let us see how his words have been verified.

At this moment there is not one pound of sugar exported from the island, and all that is used is imported from the United States. Some friends of mine have made the attempt to make sugar in a small way within a few years past, but for want of labor were obliged to abandon the project with loss. There is not raised at the very most, as I have been credibly informed by those employed in the custom-houses, more than 40,000,000 pounds of coffee, and the amount decreases yearly. With the exception of Gonaives, there is not a pound of cotton produced, and only a very limited quantity there, barely sufficient for consumption; and instead of exporting, as formerly, indigo, they import all they use from the United States The people this moment exist (not live) under the most tyrannical and corrupt government known among so-called civilized nations.

I speak from a knowledge of facts, having resided formerly some time in the island, and some of the many circumstances that came to my knowledge then I shall hereafter speak of.

I am, as I ever have been, opposed to slavery in the abstract, and believe it not only a moral wrong, but a greater misfortune to the master than the slave; but I am opposed to the still greater wrong, both moral and social, that must inevitably arise from immediate emancipation. How has it resulted in the English colonies? Was the mere nominal sum paid to the master for his slaves by the English government all that was required, all that was due to him? Was the liberty given to his slave all that he had a right to ask? I think not; for it seems almost a dream when one compares the beautiful estates that formerly adorned those islands to the few and miserably cultivated ones that are now in existence The negro was formerly as happy and contented as nature designed he should be

with all of his physical wants supplied, supported and protected by a master, upon whom the laws imposed an obligation to protect and support him in return for his labor, and indulged and encouraged in his innocent and holyday amusements. He became intoxicated at finding himself free, and, under no obligations to himself and master, soon lost all desire of self-cultivation, if he ever had any, or to cultivate the soil; and he has year by year degenerated, until now he is lower in the scale of humanity than those of his own people who roam the deserts of Africa; for *they* "know not what they do," whereas the negro of Jamaica has systematically learned vice and become too ready a pupil, and is now unfitted for any position above the lowest sensualist, and is even looked upon with contempt, to my personal knowledge and observation, by the degenerate natives of Hayti.

NORTHERNER.

AGRICULTURAL DIVISION OF THE PATENT OFFICE.

Olive cuttings for the South.—A considerable quantity of choice olive cuttings have been lately distributed in the southern States bordering on the Atlantic and the Gulf of Mexico. They were selected some months ago by the agent of the office in France from the best and most hardy varieties cultivated in that country. Of the olive it has been said with much justice, "*Olea prima omnium arborum est;*" and, when we consider its usefulness, productiveness, and importance, a little enthusiasm is not altogether misplaced. It had already been introduced into Florida, California, and the Carolinas. Into Florida it was introduced by a colony of Greeks and Minorcans, brought over by Dr. Turnbull, an Englishman, in 1769. Into California the Jesuits transplanted it from their own country about one hundred and fifty years ago; and it was about the year 1755 that Mr. Henry Laurens introduced into Charleston, from remote parts of the globe, a great variety of useful and ornamental productions, among which were olives, capers, limes, ginger, Guinea grass, the African strawberry, (which bore fruit nine months in the year,) red raspberry, and blue grapes; also, directly from the south of France, apples, pears, plums of choice varieties, and the white Chaselas grape, the latter of which bore abundantly. The fruit of the olive tree was prepared and pickled, equal to those imported. In 1785 a society was incorporated in South Carolina for the promotion of agriculture. The object was to institute a farm for agricultural experiments, to import and distribute foreign productions suitable to the climate of Charleston, and to direct the attention of agriculturists of the State to economical objects, as well as to reward those persons who should improve the art of husbandry. Among other objects of interest, the society imported and distributed some cuttings of vines and olives. The latter answered well, but the climate near Charleston proved too moist for the grapes. Attempts have been made to propagate the olive from seeds in various parts of the south, but hitherto with little success. This may be attributed to a tendency in the olive to sport into inferior varieties when so planted; but there is every reason to hope that the new importations of cuttings of approved kinds will increase the production in many parts of the south.

[Congress, in the year 1817, granted four townships of land, in the present State of Alabama, on a long credit, to a company of French emigrants, for the purpose and on the condition of their introducing and cultivating the olive and the grape; but we believe the enterprise never was prosecuted to any considerable extent, and it finally fell through, and the lands reverted to the government.]

THE WEATHER AND THE GRAIN CROPS.

The doubts, such as they have been, of a good harvest, are rapidly disappearing all over the country, while the hopes which the most sanguine have indulged gain daily stronger confirmation. As we conceive that no subject is, or ought to be, at this moment of equal importance with the prospect of the crops, we collate from various sources the following information; most of it, as will be seen, of an exceedingly encouraging nature.

The harvest is pretty well over in most of the southern States, and has commenced in the middle and western. A letter from Nashville, Tennessee, says:

The wheat is all harvested, and the yield is beyond precedent. It is double per acre to any former year, and has been saved in good order. A traveller through Georgia, says: I never saw crops look better. Large corn fields are waving breast high. The fine seasons of rain will make great crops. Farmers near Paducah, on the Ohio river, were busy in the wheat fields June 20. From South Carolina, North Carolina, Kentucky, and Mississippi, the intelligence is that the grain crop is encouraging, and the yield large. The quantity of land this year planted in corn is very considerable. In the up-country wheat is very superior. Oats, too, will make a very fair crop. In Virginia, the Farmville Journal says most of the farmers have begun cutting their wheat. Though somewhat injured by the chinch bug, it promises a much better yield than was at one time expected. The Charlottsville Jefferson also says that the farmers near there are very busy reaping grain, and it thinks that the yield will be greater than for many years previous. Harvest commenced on the Eastern Shore of Maryland this week. A correspondent of the St. Louis Republican, under date of the 13th inst., writing from Cairo, says that in the extreme southern counties of Illinois the wheat harvest is nearly closed, and the yield per acre is said to be equal to that of the best previous year, while the number of acres raised nearly double that of any former season. Such we are informed is also the case in Indiana, while in Ohio, Missouri, and other States west, every intelligence is gratifying beyond precedent.

THE CORK TREE.

About a hogshead of acorns of the cork oak was ordered from the south of Europe for distribution in the middle and southern States for experiment or to test their adaptation to soil and climate. Much is anticipated from their successful introduction. Should a portion of the present distribution by any untoward circumstances fail to answer expectation, care will be taken by the office to obtain another supply for those who feel an interest in growing this useful tree. It will be a subject of national importance if the introduction proves successful. Plantations should be established on every favorable locality, so that in due time the increasing wants of the country may be fully met by the home supply. The tree grows rapidly and attains a height of upwards of thirty feet. Indeed, even in England, there are various specimens over fifty feet high, with a diameter of more than three feet. Cork trees are much esteemed in southern Europe, and land planted with them is considered the most profitable of all that is unirrigated. They seem in general to prefer those localities where gneiss, sandstone, schistose, and calcareous rocks abound. The substance so familiarly known to us as "cork" is the epidermis or outer bark, which sometimes attains a thickness of two or three inches. This is rarely taken off until the tree has arrived at an age of fifteen or twenty years. This operation, which is carried on every six, seven, eight, or nine years, according to circumstances, is generally completed in the months of May and June, while the sap is still active in the tree. Although easy to accomplish, some care is required to avoid injuring the real bark, the "liber," which lies under the cork. A circular incision is usually made around the foot of the tree and another near the branches. Longitudinal cuts are then made; and, finally, by using the handle of a hatchet as a wedge, the cork is detached from the under bark. The larger branches are treated in a similar manner.

SOUTHERN FLOUR.

A Liverpool paper by the last steamer has the following notice, which will be interesting to our readers:

BREADSTUFFS FROM THE UNITED STATES.—The reports of the growing crops of breadstuffs in America are now favorable, and if the weather should be auspicious for the in-gathering, the quantity will exceed an average, as a greater breadth of land than usual has been sown. We are glad to find that Charleston, (S. C.) is likely to be able to export flour, (which is very unusual,) for we have seen a very beautiful sample, branded Williams, Bronson and Company, which

will be sure to command a liberal price, as it posses es great strength and is finely dressed.

This flour, we learn on inquiry, was from Tenn ssee. We are are also informed that samples of flour from the mills of Kno ville have been received in this market equal in every respect to the best from a y other quarter. Choice Georgia brands have gained an established reputation.

The great difficulty with southern flour has been in t e imperfect milling and putting up. Remove this, and it will speedily take its place at the head of the market, both at home and abroad.

The flour of warm climates is stronger than that of th colder. It has more nutriment, and suffers less from transportation. The flour f the Richmond mills was especially favored in California. It was the only kind that could be depended on to bear the passage round Cape Horn without sou ing.

Tennessee, Northern Georgia, and the Western Carolinas, thus promise to become one of the chief granaries of the world; and of a large part of this vast region Charleston is the natural market. It depends upon our merchants whether the advantages of their position shall be made tributary to the prosperity of the city.

HORSES AND MULES FOR THE SOUTH.

The neglect of grain crops by the cotton planters of the south has been often and justly animadverted upon. The maxim "produce, if possible, all of your home supplies at home"—cannot be too often or too deeply impressed upon the agricultural community of the Mississippi valley south.

But there is one corollary from this maxim, which so far, we believe, has been but little agitated or discussed. With every natural facility for growing fine horses and mules, all the cotton States (excepting a small portion of Tennessee) are tributary to Kentucky and the western States for their supplies of those useful and indispensable auxiliaries of man, whether engaged in agriculture or commerce.

There is no reason why Tennessee, Arkansas, Mississippi, Alabama, Georgia, and Texas, should not raise all of their own horses and mules. There is no earthly reason why these States should not also raise all their own corn, hogs, cows, &c. There is, likewise, no earthly reason why these States should not pay particular attention to the improvement of the breeds of all the differnnt kinds of stock.

It is sometimes said that the south is not a good grazing country, and, therefore, not suitable for growing fine stock. A moment's consideration will show that this is the purest "fudge." The lowlands bordering upon every perennial stream in the south—from the lordly Tennessee to the smallest brook "singing its quiet tune," are capable of being made, at a little expense, the finest pastures in the world.

Look at the Tennessee river bottom; how many millions of acres are there, yet awaiting the occupancy of the grazier, to whose purpose they are better suited than to those of any other class of agriculturists? So of Obion, Forked Deer, Hatchie, Wolf, Tallahatchie, the upper Tombigbee, and all the streams, large and small, of the south, including the mighty Mississippi, large portions of whose immense bottom are admirably adapted to all the requirements of the stock grower.

When will the south be true to herself? When will southern men learn their true policy? When will they learn that everything produced at home, corn and horses, peas and cows, potatoes and mules, shucks and sheep, brogans and beef, is a saving of always double, and often quadruple, of what the same article would cost, if they have it to buy?

COMPETITION OF INDIA IN COTTON.

Dr. Royle, of England, concludes his great work on the commerce and culture of cotton in India with the following remarks, which will be read with interest through our planting States:

Having carefully considered every point which seemed to be connected with the culture and commerce of cotton in India, and with an attention to details, which to many may appear unnecessary ; we may briefly refer to a few of the conclusions at which we have arrived, in order to see what are the prospects of the cotton trade of India being placed on a more extended and yet comparatively secure basis.

First the American and Indian cottons have been shown to belong to distinct species of plants ; and that the staple of the former seems to be naturally longer and stronger than that of the latter, at least in the situations where, and modes in which they are at present respectively grown.

One of the American species, that yielding the New Orleans cotton, now yields the great mass of the cotton of commerce, and the deficiency or excess in its crops controls the prices of all other cottons and the demand in a great measure for Indian cotton in its present condition. This, we have seen, is imported in considerable quantities when American cotton is dear, and in greatly diminished ones when the latter is abundant and cheap.

In a former part of this work (p. 64,) which was finished at the beginning of the year 1850, it was stated, that "we have no doubt that, in the present year, they (that is, the imports of Indian cotton,) will be as high as they have ever been ;" and, at p. 83, that the importations "will be to a greater extent, as the unfavorable prospects of the American crop were early known to some, and orders sent to India for cotton." That these anticipations have been fully confirmed, we may see by comparing the imports of the year 1850, with those of the year 1849, as given in the circular of Messrs. Tetley, dated London, 31st December, 1850, where the former not only exceed the latter to the extent of 127,059 bales, but are higher than they have ever been :

	1849.	1850.
Import of America	1,477,512	1,182,970
Import of Brazil	163,445	171,359
Import of Egyptian	72,727	79,376
Import of West Indies, &c.	9,485	5,264
Import of East India	182,079	309,168
Total	1,905,248	1,748,137
Exported	256,300	272,400
Home consumption	1,586,608	1,513,007
Average per week	30,512	29,096
Stock 31st December	558,390	521,120
Prices of Upland, 31st December	5½*d.* a 6¾*d.*	7*d.* a 8¼*d.*

Indian cotton is, no doubt, possessed of sufficient good qualities to be used for the manufacture of calicos, which wear better than those of English manufacture, as well as of muslins, which have been admired in all ages, and almost justify the poetical expression of "webs of woven air," "dew of night," "running water," and similar expressions applied to them by the natives of the East, and which an English manufacturer complimented, when he wished to disparage, by calling them the "shadow of a commodity."

Indian cotton is, however, from the shortness of staple, not well suited for all the purposes of the English manufacturer; but it is much more depreciated than it need be, from the dirty and adulterated state in which it is sent to market. When these defects are avoided, it sells in the English market at fair prices, and if continued to be so sent, would be used in greatly increased quantities. It has been shown that it can be laid down in Liverpool with some profit at 3½*d.* a pound, from Bundlecund, Broach, Candeish, Dharwar, Coimbatore, and Tinnivelly ; districts which are within the company's territories, and most of them near the sea

or river. It may even be imported at nearly the same price from the far distant territories of Hyderabad and Nagpore. But it is essential that the cotton should be sent in a clean state. If this is not done the expenses will have to be paid on dirt as well as on cotton, while a lower price will be realized in the market.

American cotton is, however, that which is most valued by the manufacturers of this country, and is also the kind which is most profitable to the cultivator in districts where the climate is suitable. Repeated experiments having been made by the East India Company during a series of years to introduce the culture of American cotton into India, and without any permanent effects being produced, it has been inferred that failures will follow the present or any future attempts. But in former experiments good cotton was produced, and there is no reason to believe at a greater comparative cost than in the present experiments, while in some districts the American plants then introduced have become so naturalized as to be taken for indigenous kinds, and the staple, after so many years of acclimation, has been considered nearly equal to that of New Orleans cotton. The present experiments might have resulted in failure, if it had not been for the determined perseverance with which they have been carried on in districts where there appeared no sufficient physical obstacles to success, as in Dharwar, Belgaum, Candeish, Coimbatore, and Tinnivelly, In these districts cotton has been grown from American seed, which has been highly valued by manufacturers as well fitted for their purposes, and has been bought by them at prices which have been amply remunerative, both to cultivators and to importers. The cost, as shown in the details given under the heads of Dharwar and Coimbatore, was not more than for native cotton, that is, about 3½*d.* a pound, laid down in Liverpool. The price realized has never been less than this sum, even before the cotton had attracted attention ; since then it has frequently sold for 6*d.* and 6½*d.*, and of late for 7*d.* and 7½*d.* The profits realized by government, even upon the comparatively small quantities, have in the Dharwar district nearly balanced the cost of the experiments. Merchants could no doubt have realized larger profits ; but in future the cultivators will expect to share more largely in the better prices arising from the increased value of this cotton in the English market. The extent to which the cultivation has been carried, in consequence of the encouragement held out, first by government, and lately by the agents and orders of merchants, is so considerable, that it is expected that not less than 9,000 bales of American cotton will be sent through Dharwar to this country in the present year. In Belgaum and Candeish the culture is also entending. In the Madras presidency, however, the natives have taken but slowly to the culture of American cotton. But the presence of European agents would remove their prejudices, and as the cotton is better, and the expenses not greater than in Dharwar, there is sufficient encouragement both for cultivators and for merchants.

In discussing the questions relating to the causes which interfere with the extended culture and commerce of cotton in India, we showed that the cultivator had little encouragement to grow that which was in such irregular demand for the English market, and that the manufacturer here was little inclined to use a cotton which, besides being shorter in staple, was sent to him in a dirty and adulterated state. He, therefore, abstains from using it, unless when compelled by the high price of American cotton. We have also shown that there was little chance for the natives themselves doing much in picking their cotton carefully, or in keeping it clean, and that, therefore, the presence of European agents among them was essential to encourage the ryots to do even that which is so much for their own advantage. Such agents would, moreover, be able to counteract the influence of the local dealers and money lenders, and the opposition of the Brahminical caste to all kinds of innovation and improvement.

The settlement of Europeans or their agents in the cotton districts, with the express purpose of encouraging the natives to improve the cultivation of their own or to grow the American cotton, is the measure which has been recommended as the one thing essential for the extension and improvement of this great staple. As the trade has been described to be profitable, it appears remarkable that no planters should have established themselves for an object which is considered of such importance by the manufacturers of Lancashire. Within the limits of the Bengal presidency there are numbers of Europeans settled in various parts, many of whom have made experiments in cotton cultnre, as recorded in the "*Transactions of the Agricultural Society of India.*" In North West India we

have seen Mr. Hamilton Bell undertaking the culture, on an extensive scale, of what he conceived to be the best kind of indigenous cotton, in a situation where American cotton would not succeed without the aid of irrigation. But the Agra-grown cotton was not approved of at Manchester. Mr. Bruce, again, long resident in the Doab and Bundlecund, and accustomed to the culture and commerce of cotton, has offered to supply (p. 307) manufacturers here with American cotton at 4*d*. or 4½*d*., and native at 3*d*. or 3½*d*. a pound.

On the Bombay side of India the American planters employed by government in the Dharwar district long complained that their efforts were not seconded by the merchants of that presidency sending agents or orders into the districts, which would encourage the ryots to grow American cotton in preference to their own. The sales of the American cotton, both in Bombay and this country, raised its price by degrees in the district; but still it was chiefly bought by government agents. Mr. Turner, the president of the Commercial Association of Manchester, took great pains (v. *Summary*) to instruct his agents in Bombay of the great value of the American cotton grown in Dharwar, and gave orders for its purchase. But to be effectual these orders required to be executed in the district itself. This also Mr. Turner arranged to have done; but his orders, and those of his friends, could not be executed, because the native dealers had at last become fully aware of the value of American cotton. Some of them, stimulated, no doubt, by the orders of their employers in Bombay, were purchasing it at a high price, 100 rupees a candy, where a few years since they would not give half that sum for that quantity. One of the Bombay houses is mentioned, in a private letter, as having sent an agent into the district. A few months since a gentleman called upon the author, previous to departing for India in order to join one of these houses, and who stated that he was to be stationed in the interior, either in Dharwar or in Candeish, for the express purpose of carrying on the cotton trade in direct communication with the cultivators. In the Broach district, though the American cotton does not succeed there, Mr. Landon has established himself as a purchaser of native cotton, which, by attention to careful picking and cleaning, he conceives may be sent to market in a state to compete with the uplands variety of American cotton. While in the government service he greatly improved the working and economy of the saw-gin. Since then, it is understood, he has introduced steam power for the propulsion of his machinery, as, indeed, it was always his intention to do. Into the district of Candeish Messrs. Stewart, Ritchie & Co., of Bombay, have sent an agent and have agreed to purchase as many saw-gins as can be supplied by the government factory at Dhurrumgaum. Such an agent, besides purchasing native cotton, will be able to encourage the growth of American cotton, for which, as we have seen, parts of the district are well suited. It is to be hoped that the planters now sent into Sattara, Surat, and Ahmedabad, will be sufficiently successful to induce some Europeans to establish themselves as cotton planters on their own account. It is also to be hoped that means may be adopted for picking and cleaning the good cotton of the far distant provinces of the Nizam territories, and also for introducing the American cotton into the Berar Valley, as Captain M. Taylor is so successfully doing in the principality of Shorapore.

In the Madras Presidency, Mr. Hughes long since established the culture of Bourbon cotton, and his successors have carried it on, though it is not now sent of such good quality as formerly. Mr. Fischer has for many years been established in the district of Salem, as an agent for the purchase of cotton for the European market; but the natives have not been induced to take up the culture of American cotton. Mr. D. Lees has, however, shown that New Orleans cotton may be successfully cultivated in the most barren parts of the Tinnivelly district, and has sent for his nephew to go on with the culture, as we learn from the "Manchester Guardian." His success and his statements have encouraged another Manchester man to determine upon proceeding to India to commence the culture of American cotton in the same district, as he intimated only a few days since at the India House. Besides this, offers have been made in India for the purchase of the machinery for cleaning cotton, which has been set up by the Indian government at Coimbatore, and this offer, the author has learnt, originates in Manchester, as the proposer has lately stated to the home authorities. The establishment of a few energetic Europeans in different districts, interested in the improvement of the cotton of India, the author feels satisfied, is all that is

required greatly to extend and improve the culture and commerce of cotton of all kinds in India.

The author begs to conclude the subject by quoting some of his observations on the same subject, published in the year 1834, which will show that he has always relied on the principles advocated here.

"I have no doubt that by the importation of foreign and the selection of native seed, attention to the peculiarities, not only of soil, but also of climate, as regards the course of the seasons, and the temperature, dryness, and moisture, of the atmosphere, as well as attention to the mode of cultivation, such as preparing the soil, sowing in lines, so as to facilitate the circulation of air, weeding, ascertaining whether the mixture of other crops with the cotton be injurious or otherwise, pruning, picking the cotton as it ripens, and keeping it clean; great improvement must take place in the quality of the cotton. Experiments may at first be more expensive than the ordinary culture; the natives of India, when taught by example, would adopt the improved processes as regularly and as easily as the other; and as labor is nowhere cheaper, any extra outlay would be repaid fully as profitably as in countries where the best cottons are at present produced."—(*Illustrations of Himalayan Botany*, p. 97.)

CONSUMPTION OF ANIMAL FOOD IN THE UNITED STATES.

Heretofore we have known very nearly the number of animals raised in the United States, but we have not known the number and weight of animals actually consumed in the country. But this fact is very desirable, and will prove very useful. It is well known that the cattle, as well as the hog trade, furnish a very large portion of the exchanges of the country, and hence the question of how much, where, and when animal food is consumed, has a direct relation to the financial as well as commercial concerns of the country. The progress of statistics, however, gradually furnishes the materials to show this, and all similar problems. The great difficulty is to find a unit of measurement for the consumption of cattle and hogs. In the cattle trade, we know that the great cities of the country are the main purchasers of cattle, insomuch that what enters into general commerce is a very small amount of what is consumed in the large towns. With hogs it is something different, for an immense amount of pork and lard enter into general commerce for exportation, especially to southern latitudes, and for the navies and armies of the world.

At present we shall confine ourselves to the supply and consumption of cattle and sheep as food; in other words, beef and mutton. For the consumption of beef, we want a unit. It might have been furnished by the statistics of Smithfield market, London; but we are not aware that they have been kept and recorded. The New York market, however, is a still better test, for the whole of our population are meat eaters. Fortunately, all the cattle, sheep, and calves consumed in New York are sold from some half dozen yards. Fortunately, also, the New York *Tribune* has kept a reporter especially for those yards, and has given us the entire number of cattle, sheep, and calves consumed in 1854 in New York city, including Brooklyn, &c. The aggregate result is as follows:

Cattle consumed	154,000
Sheep and lambs	470,000

We know very nearly the average weight of these animals, and the population by whom they are consumed. The average weight of the cattle may be taken at 750 pounds, and of the sheep and calves, 80 pounds. The population of New York, Brooklyn, and Williamsburg, in 1854, was about 750,000. Here, then, we have the elements for the solution of the general problem.

Before we go further, let us look at the financial aspects of the question, as between New York and the west, where cattle sold for an average of $70 each; the sheep and calves at an average of $5 50 each. We have then this result:

Value of 150,000 cattle	$10,780,000
Value of 470,000 sheep and lambs	2,585,000
Aggregate value of beef and mutton in New York	13,365,000

Now, full three-fourths of this entire amount came from the west, beginning with the valley of the Alleghany, in New York and Pennsylvania. New York, then, has to pay *ten millions of dollars* to the west for cattle and sheep, (independent of wool,) and the west is thus furnished with ten millions in exchange for the payment of its dry goods. This financial operation is one of great importance, and makes no small part of the business of the banks in the interior of Ohio and Kentucky. It is a safe and profitable business; and in regard to their own operations, no banks are safer than those based on the cattle trade.

But let us look at the general consumption of cattle in this country. The above facts show that each 1,000 persons in civic population consume 205 cattle and 533 sheep per annum. What does this give us for the whole town population of the United States? The following table will exhibit the account:

Names of towns.	Population.	Cattle.	Sheep and lambs.
New York	750,000	154,000	470,000
Philadelphia	500,000	101,000	313,500
Boston, including Roxbury and Charlestown.	180,000	36,900	109,990
Baltimore	210,646	43,050	125,980
New Orleans	150,000	30,800	94,000
Cincinnati	160,000	32,850	99,330
St. Louis	90,000	18,460	47,997
Charleston	50,000	10,276	31,333
Buffalo	50,000	10,276	31,333
Cleveland	30,000	6,150	19,080
Chicago	50,000	10,276	31,333
Detroit	25,000	5,133	15,666
Albany	60,000	12,000	38,160
Troy	30,000	6,150	19,080
Rochester	40,000	8,200	25,440
Portland	25,000	5,133	15,666
Lowell	35,000	7,175	22,260
Salem	20,000	4,100	12,720
Manchester	15,000	3,078	9,540
New Bedford	18,000	3,690	9,599
Pittsburg, including Alleghany	100,000	20,500	63,600
Wheeling	20,000	4,100	12,720
Richmond	30,000	6,150	19,080
Norfolk	25,000	5,133	15,666
Louisville	60,000	12,300	38,160
Memphis	15,000	3,078	9,540
Other towns over 5,000	200,000	246,000	763,200
Aggregate	3,938,646	806,232	2,453,483

The towns over 5,000 inhabitants each in the United States contain at present four million of inhabitants, or about one-fourth the population of the country. The large towns consume eight hundred thousand beeves and two and a half million of sheep and lambs. At an average of $50 each for the beeves, and $3 each for the sheep, which is not too much, we have the following result:

Value of 800,000 beeves	$40,000,000
Value of 2,500,000 sheep and lambs	7,500,000

Let us now add to this the hogs of commerce:

3,000,000 at $8	24,000,000
Total	$71,500,000

If, now, we add to this aggregate the pickled beef, the salt barrels, and labor used in packing pork, and finally the value of wool sold from sheep, we find the

commerce in animals amounting in value to full one hundred millions of dollars; an amount greater than the entire cotton crop. Two-thirds of this entire product comes from the States in the valley of the Ohio; and we shall not be beyond the mark in saying, that the States of Ohio and Kentucky create an exchange on the Atlantic States equal to twenty millions of dollars per annum, derived from the commerce in animals.

In reference to the average weight consumed, if the above number of beeves, sheep, and hogs, be reduced to their aggregate weight, and then divided by four millions, (the aggregate of town or city population,) the result will be about 15 ounces to each individual per diem. Now, the daily ration of solid meat allowed in the British navy is 12 ounces, which may be taken as the average for adults. The excess of quantity found in the above calculation will be fully accounted for by exportation to other countries, and by the consumption of towns of less than 5,000 inhabitants. The general accuracy of the above calculution is, therefore, sufficiently proved, and the magnitude of the result furnishes another illustration of the value of internal commerce.—*Cincinnati Price Current.*

THE SORGHO, A NEW SUGAR PLANT.

The scarcity of corn in France, as we learn from an English cotemporary, has drawn attention to a new plant, recently introduced from China, which promises to supersede, to a certain extent, the use of beet root in the manufacture of sugar and the distillation of alcohol. The agricultural committee of Toulon has recently addressed a report to the minister of war, with respect to the use of the plant in question. It is called the *sorgho*, or *holeus saccharatus*, and was first introduced into France in 1851, by M. de Montigny, the French consul in China, who sent some grains of the seed to the government. Since then the culture of the plant has been commenced with success in Provence, and promises to be of great advantage to Algeria. The *sorgho* has been called the "sugar cane of the north of China," and numerous experiments have recently been tried with a view to ascertaining if it possesses the properties necessary for producing a crystallizable syrup, so as to become a rival to sugar cane and beet root. According to the report of the Toulon Agricultural Association, it would appear to have those properties. The fact has been ascertained by a series of experiments made in the department of the Var. It also appears to be richer in the sacharine principle than any known plant, except the vine. Beet root contains from eight to ten per cent. of sugar; the sorgho produces from sixteen to twenty per cent., from which eight or ten per cent. of pure alcohol, fit for all industrial and domestic purposes, can be produced. The refuse is excellent food for cattle, who are very fond of it. The plant grows with great rapidity, and does not require irrigation. The sorgho is not a new discovery, as it has been used from time immemorial by the inhabitants of the north of China, by whom large quantities of sugar are extracted from it. But this is the first time it has been produced on anything like an extensive scale in Europe.

HOME-MADE GUANO.

S. B. Halliday, of Providence, R. I., has a process by which he can convert the fish which swarm our coast every season into an article like guano, at less than half the cost of the Peruvian article, and Professor Hare, of Philadelphia, thinks equally valuable. Mr. Halliday says:

"I am able to say very confidently that this product can be afforded at $25 per ton, and pay the manufacturers more than fifty per cent. The oil (according to Drs. Jackson and Hale) being almost valueless for fertilizing purposes, it is first taken from the fish, and they are then converted into guano. The cost of the fish is about $2 per ton, and containing nearly 3 per cent. of oil, and the oil will pay for the fish, and nearly for the labor in manufacturing. By my own experiment, I thoroughly demonstrated the rendering of fish into guano. I then consulted Dr. Hare, of Philadelphia, who, I ascertained, had experimented extensively and successfully. I obtained from him his process, and have received considerable instructions from him on the subject. I have also consulted Dr. Jackson more recently. These gentlemen, and all with whom I have consulted, agree as to the great value of this fertilizer."

SUGAR—ITS CULTURE AND CONSUMPTION IN THE WORLD.*

No. 1.—SUGAR.†

Sugar is obtained from many gsasses, and, indeed, is common in a large number of plants. It is procured in Italy from *Sorghum saccharatum;* in China, from *Saccharum sinense;* in Brazil, from *Gynerium saccharoides;* in the West Indies, from *saccharum violaceum;* and in many other parts of the world from *S. officinarum.* The last two are commonly known as sugar canes, and they are generally considered as varieties of a single species, *S. officinarum*, which is now widely spread over different parts of the world.

Some curious specimens of palm sugars were exhibited at the Great Exhibition of 1851—among others, gomuti palm sugar (*Arenga saccharifera*) from Java; date palm sugar, from the Deccan; nipa sugar, from the stems of *Nipa fruticans;* and sugar from the fleshy flowers of *Bassia latifolia*, an East Indian tree.

Among the other sugars shown were beet-root sugar, maple sugar, date sugar, from Dacca, sugar from the butter tree, (*Bassia butyracea,*) produced in the division of Rohekkund, in India; and sugar candy, crystalized by the natives of Calcutta, and other parts of India.

Sugar and molasses from the grape were also shown, from Spain, Tunis, and the Zollverein.

Sugar, or sugar candy, has been made in China from very remote antiquity, and large quantities have been exported from India, in all ages, whence it is most probable that it found its way to Rome.

The principal impurities to be sought for in cane sugar are inorganic matter, water, molasses, farina, and grape, or starch sugar. The latter substance is occasionally, for adulterating purposes, added in Europe to cane sugar; it may be detected by the action of concentrated sulphuric acid and of a solution of caustic

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* By P. L. Simmonds, of London.

† Sugar seems to have become a regular article of importation into Great Britain from the United States. The consumption of imported sugar in 1854, according to Parliamentary returns, was as follows:

Imported sugar consumed in Great Britain.

		Cwt.
1831		81
1840	old duties	2,305
1844		92
1845	reduction	76,994
1846		584,366
1848		1,216,912
1854		2,439,291

Of the quantities consumed in 1854, the origin was as follows:

	Cwt.
Cuba	1,340,320
Porto Rico	303,429
United States	61,606
Brazil	404,415
Java	110,068
Philippine Isles	120,975
	2,340,813

Such has been the vast increase in the consumption of slave-grown sugar by England since she emancipated her own sugar-growing slaves. According to England's demand for sugar has the value of slaves in the Spanish islands risen and fallen, and the activity of the slave trade increased or depressed in proportion. Cuba and the United States are now both competitors in the British markets for the sale of sugar. It should be remarked, however, that the English returns do not distinguish between the country of growth and of export. It is therefore possible that a proportion of that derived from the United States may be Cuba sugar. The great diminution which this year takes place in the production of beet-root sugar in Europe must have a great influence upon the cane article for the coming year.—*United States Economist.*

potassa; the former blackens cane sugar, but does not affect the starch sugar while potassa darkens the color of starch sugar, but does not alter that of cane sugar. But the copper test is far more delicate. Add to the solution to be tested a few drops of blue vitriol, and then a quantity of potassa solution, and apply heat; if the cane sugar is pure, the liquor will remain blue, while, if it be adulterated with starch sugar, it will assume a reddish-yellow color.

Inorganic matter is determined by incineration, farina by the iodine test, water by drying at 210 degrees, and molasses by getting rid of it by re-crystalization from alcohol, as also by the color and moisture of the article.

The natural impurities of sugar are gum and tannin; gum is detected by giving a white precipitate with diacetate of lead, and tannin by giving a black coloration or precipitate with persulphate of iron.

An experienced sugar-dealer easily judges of the value of sugar by the taste, smell, specific gravity, moisture, and general appearance.

The value of molasses may be determined by drying at 220 degrees, and by the taste.

The commercial demand for sugar is mainly supplied from the juice of the cane, which contains it in greater quantity and purity than any other plant, and offers the greatest facilities for its extraction.

Although sugar, identical in its character, exists in the maple, the cocoa-nut, maize, the beet-root, and mango, and is economically obtained from these to a considerable extent, yet it is not sufficiently pure to admit of ready separation from the foreign matter combined with it, at least by the simple mechanical means the ordinary producers usually have at command, unless carried on to a large extent, and with suitable machinery and chemical knowledge and appliances.

The different species of commercial sugar usually met with in this country are four, viz: brown, or muscovado sugar, (commonly called moist sugar,) clayed sugar, refined or loaf sugar, and sugar candy; these varieties are altogether dependent on the difference in the methods employed in their manufacture.

The cultivation of the sugar cane and the manufacture of sugar were introduced into Europe from the East, by the Saracens, soon after their conquests, in the ninth century. It is stated by the Venetian historians, that their countrymen imported sugar from Sicily, in the twelfth century, at a cheaper rate than they could obtain it from Egypt, where it was then extensively made. The first plantations in Spain were at Valencia; but they were extended to Granada, Mercia, Portugal, Madeira, and the Canary islands, as early as the beginning of the fifteenth century. From Gomera, one of these islands, the sugar cane was introduced into the West Indies, by Columbus, in his second voyage to America, in 1493. It was cultivated to some extent in St. Domingo in 1506, where it succeeded better than in any of the other islands. In 1518, there were twenty-eight plantations in that colony, established by the Spaniards, where an abundance of sugar was made, which, for a long period, formed the principal part of the European supplies. Barbadoes, the oldest English settlement in the West Indies, began to export sugar in 1646, and as far back as the year 1676 the trade required four hundred vessels, averaging one hundred and fifty tons burden.

The common sugar cane is a perennial plant, very sensitive to cold, and is, therefore, restricted in its cultivation to regions bordering on the tropics, where there is little or no frost. In the eastern hemisphere its production is principally confined to situations favorable to its growth, lying between the fortieth parallel of north latitude and a corresponding degree south. On the Atlantic side of the western continent, it will not thrive beyond the thirty-third degree of north latitude and the thirty-fifth parallel south. On the Pacific side it will perfect its growth some five degrees further north or south. From the flexibility of this plant, it is highly probable that it is gradually becoming more hardy, and will eventually endure an exposure and yield a profitable return much further north, along the borders of the Mississippi and some of its tributaries, than it has hitherto been produced. In most parts of Louisiana the canes yield three crops from one planting. The first season is denominated "plant cane," and each of the subsequent growths, "ratoons." But, sometimes, as on the prairies of Attakapas and Opelousas, and the higher northern range of its cultivation, it requires to be re-planted every year. Within the tropics, as in the West Indies and elsewhere, the ratoons frequently continue to yield abundantly for twelve or fifteen years from he same roots.

The cultivation of this plant is principally confined to the West Indies, Venezuela, Brazil, Mauritius, British India, China, Japan, the Sunda, Phillippine, and Sandwich Islands, and to the southern districts of the United States. The varieties most cultivated in the latter are the striped blue and yellow ribbon, or Java, the red ribbon, violet, from Java, the Creole, crystalline or Malabar, the Otaheite, the purple, the yellow, the purple-banded, and the grey canes. The quantity of sugar produced on an acre varies from five hundred to three thousand pounds, averaging, perhaps, from eight hundred to one thousand pounds.

Six to eight pounds of the saccharine juice of the plant, yield one pound of raw sugar; from 16 to 20 cart-loads of canes, ought to make a hogshead of sugar, if thoroughly ripe. The weight necessary to manufacture 10,000 hogsheads of sugar, is usually estimated at 250,000 tons, or 25 tons per hogshead, of 15 or 16 cwt.

The quantity of sugar now produced in our colonies is in excess of the demand of the consumers, that is, of their demands cramped as they are by the duties still levied on sugar consumed in Great Britain, imposed for the purpose of revenue; the high duty on all other but indigenous sugar, consumed all over the continent, imposed to promote the manufacture of beet-root sugar, and the legal duty levied on all other than indigenous sugar used in the United States, for the purpose of protecting the sugar production of that country; and so long as that excess exists—until a further reduction of duties shall increase consumption and cause sugar to be used for many purposes which the present high rates prohibit its being applied to—any improvement which may be effected in quality—any increase which may be effected in the quantity of colonial sugar—will only result infinitely more to the benefits of the consumers than the producers. In 1700 the quantity consumed in Great Britain and Ireland was only about 200,000 cwt. In 1852, including molasses, &c., it was not less than 8,000,000 cwt., a forty-fold increase in the century and a half. Taking the whole population last year, it was nearly 28 pounds per head. In 1832 the consumption in Great Britain alone was put down by Mr. McCulloch at 23 pounds; and as my estimate includes Ireland, where the consumption is notoriously small, we may infer that it has increaced in Great Britain since 1832 at least 5 pounds per head. As the allowance to servants is from three-quarters of a pound to a pound per week, it may be assumed that 50 pounds a year, at least, is not too much for grown persons. In sugar producing countries the quantity consumed is enormous; the laborers live on it in the manufacturing season; and a Duke of Beaufort, who died about 1720, consumed one pound daily for forty years, and enjoyed excellent health till he was seventy years of age. The consumption of sugar has increased considerably since it has become cheap; and we may expect, therefore, that the consumption will extend more rapidly than ever. The whole quantity consumed in Europe last year, including beet-root sugar, was not less than 16,000,000 cwt. If peace be preserved and prosperity continue, the market for sugar will extend amazingly, and force the cultivation by free men in all tropical countries.

Years.	British plantation.	East India & Mauritius.	Total of B. P. E. I., & Mauritius.	Consumption.
	Tons.	*Tons.*	*Tons.*	*Tons.*
1838-39	176,033	54,017	230,050	195,483
39-40	141,219	60,358	201,577	191,279
40-41	110,739	52,232	162,971	179,741
41-42	107,560	97,792	205,352	202,971
42-43	123,685	80,429	204,114	199,491
43-44	125,178	78,943	204,121	202.259
44-45	122,639	81,959	204,598	206,999
45-46	142,384	102,690	245,074	244,030
47-48	164,646	125,829	290,475	289,537
48-49	139,868	107,844	247,712	308,131
49-50	142,203	121,850	264,053	296,119
50-51	129,471	119,317	248,788	305,616
51-52	148,000	110,000	258,000	312,778

The above figures refer to raw sugar only.

At these periods, calculating from 1838–39, the duty on British sugar ranged from 24 shillings down to 10 shillings per cwt., and foreign slave-grown sugar from 63 shillings down to 14 shillings. The greatest impetus was given to foreign sugar when the duties were reduced, in 1846.

The extension of sugar cultivation in various countries where the climate is suitable, has recently attracted considerable attention among planters and merchants. The Australian Society of Sydney offered its Isis gold medal recently to the person who should have planted, before May, 1851, the greatest number of sugar canes in the colony. I have not heard whether any claim was put in for the premium, but I fear that the gold fever has diverted attention from any new agricultural pursuit, and that honorary gold medals are therefore unappreciated. Moreton Bay and the northern parts of the colony of New South Wales, are admirably suited to the growth of all descriptions of tropical products.

The Natal Agricultural Society is also making great exertions to promote sugar culture in that settlement. Mr. E. Morewood, one of the oldest colonists, has about 100 acres under cultivation with the cane, and I have seen some very excellent specimens of the produce, notwithstanding the want of suitable machinery to grind the cane and boil the juice. Many planters from the East Indies and Mauritius are settling there. His Royal Highness Prince Albert awarded, through the Society of Arts, a year or two ago, a gold medal, worth 100 guineas, to Mr. J. A. Leon, for his beautiful work descriptive of new and approved machinery and process employed in the cultivation and preparation of sugar in the British colonies, designed to economise labor and increase the production.

The centrifugal machines, recently brought into use, for separating the molasses from the sugar, more quickly than the old-fashioned method of coolers, have tended to cheapen the production and simplify the processes of sugar making. The planters object, however, to the high prices which they are charged for these machines, so simple in their construction ; and that they are not allowed by the patent laws to obtain them in the cheaper markets of France and Belgium.

Great loss has hitherto taken place annually, in the sugar colonies, through the drainage of the molasses, resulting from the imperfect processes in use ; but this can now be obviated, by the use of the centrifugal machine. It is a modification of the "hydro-extractor," and is the invention of Mr. Finzel, of Bristol.

The machine being filled with sugar, appropriately placed, is rapidly revolved, and a powerful centrifugal force generated ; the moisture is speedily removed to the circumference of the revolving vessel, and passes off through apertures adapted for the purpose.

Various other improvements in the making of sugar have been carried into effect within the last few years by Dr. Scoffern, Messrs. Oxland and M. Melsens, but the description of these would occupy too much of my space, and those who are desirous of growing sugar on an extensive scale, I must refer to Dr. Evans' "Sugar Planter's Manual," Mr. Wray's "Practical Sugar Planter," Agricola's "Letters on Sugar Farming," and other works which treat largely and exclusively of the subject.

An announcement has recently been made, that a Mr. Ramos, of Porto Rico, has discovered some new dessicating agent, to be used in sugar making, which is to cost next to nothing, but improves most materially the quality of the sugar made, and also increases considerably the quantity obtained by the ordinary process.

The average annual quantity of cane sugar produced and sent into the market of the civilized world, at the present time, may be taken at 1,500,000 tons, exclusive of the amount grown and manufactured for local consumption in India, China, Cochin China, and the Malay Archipelago, of which no certain statistics exist, but which has been estimated at about another million tons.

So far back as 1844, the Calcutta "Star," in an article on sugar, estimated the domestic consumption, in India, at 500,000 tons. This is considerably below the mark, even if India is taken in its limited signification, as including only British subjects. On this estimate the 94,000,000 of British subjects, men, women and children, would not individually consume more than one pound avoirdupois by the month. A fat, hungry Brahmin, at any of the festivals given by the great, will digest for his own share four pounds, without at all embarrassing his stomach.

Assuming the million and a half of tons that find their way into civilized markets to represent an average value at the place of production of £15 per ton, we

have here the representation of £22,500,000 sterling. But this value may fairly be increased by one-fourth.

The whole exportable production of the sugar-growing countries was found to be, in 1844, about 780,000 tons, of which Cuba furnished 200,000 tons. In 1845, notwithstanding Cuba only produced 80,000 tons, the increase from other sources was so considerable (namely :—the British colonial supply 40,000, United States 40,000, Porto Rico 15,000, Brazil 10,000 tons) that the total produce fell very little short of the previous year—having reached 764,000 tons.

The present SUPPLY of sugar to the markets of Europe, is nearly as follows :

	Cwt.
England	8,000,000
France	2,550,000
German League	1,350,000
Prussia	220,000
Austria, (ten provinces)	560,000
Belgium	294,000

Other States not defined.

The present DEMAND, according to the estimated consumption per head (28 lbs.,) found to exist in England, where taxation is favorable, and the price moderate, would be about 3¼ million tons, viz :

	Cwt.
England	8,000,000
France	8,875,000
Germany	5,750,000
Prussia	4,100,000
Austria	8,642,857
Belgium	1,250,000
Russia	15,250,000
Rest of Europe	12,500,000

The whole annual PRODUCTION of the world is estimated by another party at 1,471,000,000 pounds. Of the whole amount of sugar produced, Europe consumes about 648,700 tons, divided nearly as follows :

	Pounds.
Great Britain	803,360,096
France	160,080,000
Belgium	19,840,000
Netherlands	42,000,000
Russia	70,000,000
Denmark and Sweden	22,000,000
German Zollverein	101,300,000
Other parts of Germany	160,000,000
Austria	50,000,000
	1,428,580,096

The following figures show the quantity of raw sugar in general, in tons, imported into the British markets for the last five years, compared with consumption :

Years.	Entire importations.	British consumption.	Surplus.
1847	415,289	390,281	125,008
1848	354,834	309,424	45,410
1849	362,087	299,041	63,046
1850	332,470	310,391	22,089
1851	419,083	329,561	89,472
1852	360,033	358,642	1,391

Deduced from Parliamentary Paper, No. 461, session 1853.

The consumption of sugar then in the whole world may be roughly estimated at two and a half millions tons, of which the United Kingdom may now be put down for 350,000; the rest of Europe 420,000, and the United States 300,000 tons.

The United States produce about 140,000 tons of cane and maple sugar, which are exclusively used for home consumption, the remainder of their requirements being made up by foreign importation. The American consumption, which in 1851 amounted to 133,000 tons of sugar cane reached last year a total of 321,000 tons, almost as much as England consumed—358,000—and more than the consumption of 100,000,000 of persons on the continent.

The whole product of tropical sugar is about one million and a half tons, while the consumption is probably two million tons; but the manufacture of sugar from beet root, maple, and other sources, supplies the deficiency.

The total quantities of sugar, and molasses as sugar, consumed in the United Kingdom in the last six years, were, according to a Parliamentary paper, No. 292, of the last session, as follows:

Years.	Cwt. sugar.	Cwt. molasses.
1847	4,723,232	1,256,421
1848	5,003,318	865,752
1849	5,283,729	1,021,065
1850	5,570,461	752,027
1851	5,043,872	1,522,405
1852	7,203,631	799,942

The returns further specify that the average annual consumption of *British colonial sugar*, in the five years ending 1851, was 5,124,922 cwt.; and in the five years ending 1846, was 4,579,054 cwt.; the average consumption of British colonial sugar, has, therefore, exceeded in the five years since the duties were reduced, in 1846, the average consumption of the five previous years by 545,868 cwt. per annum; or in the aggregate in the five years, the excess has been 3,239,338 cwt. The quantity consumed in the year ending December, 1852, was 4,033,879 cwt.*

THE CULTIVATION OF TOBACCO.

We are indebted for this, and the next article, to the able report on the Agriculture and Geology of Mississippi, by B. L. C. Wailes, State Geologist:

When the country came under the dominion of Spain, a market was opened in New Orleans; a trade in tobacco was established, and a fixed and remunerating price was paid for it, delivered at the king's warehouses. Tobacco thus became the first marketable staple production of Mississippi.†

The tobacco plant, indigenous to the country, soon came into general cultivation.

The larger planters packed it in the usual way in hogsheads. Much of it, however, was put up in carrets, as they were called, resembling in size and form two small sugar-loves united at the larger ends

The stemmed tobacco was laid smoothly together in that form, coated with wrappers of the extended leaf, enveloped in a cloth, and then firmly compressed by a cord wrapped around the parcel, and which was suffered to remain until the carret acquired the necessary dryness and solidity, when, together with the surrounding cloth, it was removed, and strips of linn-bark were bound around it at proper distances, in such a manner as to secure it from unwrapping and losing its proportions.

* There is frequently a discrepancy in the figures in the Parliamentary papers, which will account for a want of agreement in some of these returns.

† In 1783, Mr. Wm. Dunbar writes: "The soil of Natchez is particularly favorable for tobacco, and there are overseers there who will almost engage to produce you between two and three hogsheads to the hand, besides provisions."

The rope used for this purpose was manufactured by the planter, from the inner bark of the linn, or bass-wood, then one of the most common trees of the forest.

One end of the rope was made fast to a post, in front of which the operator, seated with the roll of tobacco on his knee, and his foot against the post, connected the other end with the carret, turning it with his hands while the necessary tension was maintained upon the rope, wrapped it securely and evenly from end to end.

In those days, when the roads were indifferent, and wagons and carts were few, the tobacco hogsheads were frequently geared to a horse by means of a pair of rude temporary shafts, connected with the heading, and in this manner rolled to the shipping point, or to market at Natchez; much being transported in this way from the settlements on Cole's creek, and from greater distances.

To convey the tobacco to market in New Orleans, it was usual for several planters to unite and build a flatboat, with which one of the number would accompany the joint adventure, deliver the tobacco at the public warehouse, and, if it passed inspection, receive the proceeds, and return home by land, generally on foot; the payment being made in a written acknowledgment, or *bon*, as it was called, which entitled the holder to receive the amount from the governor or commandant at Natchez, thus obviating the labor and risk of packing the specie several hundred miles.

The monopoly of the tobacco trade was retained by the King of Spain, and the price paid for all that passed inspection at his warehouses was uniform.

The price was regarded as liberal, and yielded a fair return for its production, whilst the stability and certainty of a market encouraged an increased cultivation; the country began to prosper, and the planters were enabled to make purchases of slaves, the current price of which averaged about three hundred and fifty dollars.

There was no classification in the sale of the tobacco. If the article passed inspection, it was taken, and the quality was generally such *that for that cause* it could not be rejected. Nevertheless, it sometimes happened that an unobjectionable article was left upon the planter's hands, if, from ignorance of established usage, he had omitted the customary *douceur* to the inspector.

This, however, soon came to be better understood. The capacious pockets of the inspector were not worn without a purpose, and the expected purse was habitually dropped into it without at all shocking the moral sense of the wearer.

It was not necessary, or perhaps altogether proper, to couple the offering with expressed conditions; that, if not indelicate, would have been quite superfluous, it being quite safe and effectual to make the silent contribution. Nor was any particular secrecy or concealment at all necessary. This was not considered *bribery;* the king always paid his servants indifferently, and these were but the *perquisites* of office which indemnified the needy official for his poorly requited services.

Whether these usages, reacting upon the producers, had any effect upon the quality or condition of the tobacco in the end, is not, perhaps, altogether clear; but it is certain that, from some cause, either from fraud in packing, the falling off in quality, or from the competition of the Kentucky tobacco introduced into New Orleans, under General Wilkinson's contracts with the Spanish authorities, or by their connivance, the price was so reduced, that the further cultivation of it in Mississippi, for exportation, was, in a few years, wholly abandoned, greatly to the injury and embarrassment of the planters, who had, for the purchase of slaves, contracted debts which they now found it difficult to discharge.

THE CULTIVATION AND PREPARATION OF INDIGO.

The tobacco crop being no longer profitable, indigo, which had been cultivated for some time in Louisiana, was now resorted to.* This most offensive and unwholesome pursuit was nevertheless the most profitable one in which the planter could engage. Seed was obtained at the cost of about fifty dollars per barrel, and some of the small farmers engaged in cultivating the indigo exclusively for

* Indigo had not been cultivated in the Natchez district as late as 1788, and until after the failure of the tobacco business it was produced only for the seed, which was supplied to the Point Coupee and other settlements on the Mississippi.

the seed to supply those whose larger means enabled them to erect the necessary fixtures, and to prosecute the cultivation and manufacture on a profitable scale.

Indigofera tinctoria, from which the indigo pigment of commerce is prepared, said to have been introduced from India, flourishes luxuriantly in the southern States, where a variety termed the *Atramentum anil* is said to grow spontaneously. It was cultivated in drills, and required careful handling when young and tender, the subsequent cultivation being similar to that of the cotton plant.

When mature, in good land, it attained the height of about three feet. It was then, previous to going to seed, cut with a reap-hook from day to day, tied in bundles in quantities suited to the capacity of the steeping-vats, to which it was immediately transferred. These vats or uncovered reservoirs were constructed in pairs above ground, of thick plank dovetailed together in such a manner as to be perfectly water-tight; the larger one, or steeping-vat, so elevated as to permit the draining off of the liquid into the smaller, or beater, in which it is churned or agitated.

This vat was usually about four feet deep, eight feet wide, and about fifteen feet in length. Two or three pairs of these vats were sufficient for the largest indigo establishments in the country. One pair ordinarily sufficed.

The vats were placed near a pond of clear soft water, (spring or *hard* water would not answer,) and the shallower the ponds, and the greater the surface of water exposed to the sun, the better.

Into the steeping-vat the indigo weed, as cut, was thrown, and the water pumped on to it. The steeping generally required a day; but this depended in a great degree upon the temperature of the weather during the process and that of the water used.

When the steeping was carried to the proper point, and the fermentation suffered to continue until all the coloring matter or *grain* was extracted, which was ascertained by examining the liquid in a silver cup, the turbid liquid was drawn off into the beater.

If drawn off prematurely, a loss in the coloring matter was sustained, and if deferred too long, putrefactive fermentation ensued, which injured the quality of the dye.

Attached to a shaft, revolving across the smaller vat, was a set of arms or paddles, by which the liquid was churned or agitated. In small establishments, the shaft or beater was turned by hand, but generally horse-power was connected with it.

The beating or churning process was continued for several hours, during which the precipitation was aided by adding a small quantity of lime. Other substances were often substituted, however, some using a mucilage obtained from the ocra plant, the sassafras, or from a plant known as the moave.

The grain or coloring matter being separated, as ascertained by test with the silver cup, flakes of the pigment being seen spreading or settling on the bottom, it was suffered to subside, and the supernatant liquid was drawn off through a series of holes descending towards the bottom. The indigo deposit was then removed by wooden shovels from the vat into draining-boxes lined with canvas, and placed upon beds of sand, afterwards transferred to moulds lined in like manner, dried in the shade, and cut into cubes.

After undergoing a further curing by being laid on smooth plank shelves, where it underwent a sweat, it was packed in boxes for exportation.

A variety of delicate light blue color was called "floton;" but that termed the "pigeon neck," from its prismatic colors, was most esteemed.

The price obtained for the best quality is variously represented, some affirming that it was from one and a half to two dollars per pound.

A second cutting of the suckers or sprouts was obtained, but the indigo produced from it was of inferior quality.

About one hundred and fifty pounds of indigo are said to have been produced to the hand.

The whole process was of the most disgusting and disagreeable character. Myriads of flies were generated by it, which overspread the whole country. The plant itself, when growing, was infested by swarms of grasshoppers, by which it was sometimes totally destroyed, and the fetor arising from the putrid weed thrown from the vats was intolerable. The drainings from these refuse accumulations into the adjacent streams killed the fish. Those in Second creek, previously abounding in trout and perch, it is said were destroyed in this way.

It is not surprising, therefore, that the cultivation of indigo was abandoned in a few years, and gave way to that of cotton, so remarkable for its freedom from the disagreeable concomitants of tobacco and indigo culture, and comparatively so light, neat, and agreeable in its handling.

HEMP---ONE OF THE GREAT STAPLES OF THE COUNTRY.

The article of hemp has become one of the important staples of the west. The late census report makes the annual aggregate production in the United States upwards of 60,000 tons. This article is one indispensable necessary to our navy and commercial marine. In former years we looked to Russia for the supply; but of late we have become independent of the foreign production, and we now rely mainly upon the American production, as is shown by the statistics of the late census, and more fully by the able and elaborate speech of the Hon. John R. Thomson, of New Jersey, made during the last Congress, before the Senate of the United States, in the case of David Myerle.

It abundantly appears from the evidence produced by Mr. Thomson, in support Mr. Myerle's claim upon the government, for damages sustained by him through a violation of contract in the rejection of his hemp, that in 1839 the Hon. James K. Paulding, then Secretary of the Navy, induced Mr. Myerle, under promise of sustaining him from loss, to embark upon experiments for testing the practicability of supplying the navy with American water-rotted hemp. Some experiments for the purpose had been made under the sanction of the government many years previous; but these had left behind them a general opinion that the operation of water-rotting of hemp was impracticable in our climate, and the object was abandoned.

In an interview had by Mr. Myerle with the Secretary, the subject was mentioned by the latter, when Mr. M. expressed the utmost confidence in the entire practicability and safety of the process, and of the feasibility of successfully overcoming, by a course of proper experiments, the existing deep-rooted prejudices against it. The Secretary concurring in his views and justly considering it an object of the highest consideration, as well as eminently entitled to the patronage and encouragement of the government, he urged him to abandon the business in which he was then engaged, as far as might be necessary, and to enter upon, and carry out, in the heart of the hemp growing region of the west, the experiments necessary to establish both the practicability and safety to health of the process. To induce him to this course, he tendered him the patronage of the government, and made the most liberal promises of encouragement and indemnity against loss; as well as, if successful, the most generous government reward.

The navy commissioners, at the time, fully concurred in the views of the Secretary; also the chairman and several members of the naval committee of the House of Representatives cordially coincided in the same. Under these assurances and promises, and urged by his zeal for the successful accomplishment of the object and wishes of the government, as also by motives of patriotism, he agreed to abandon the lucrative business in which he was at the time engaged, and enter at once upon the experiments proposed. The expenses attendant upon the experiments were all borne by Myerle, and must have been very heavy; almost insuperable difficulties and obstacles, growing out of the deep-rooted prejudices of the people, opposed his initiatory efforts in the matter. His workmen (of whom at one period he had about 200) were difficult to procure, owing to the fear of the effects upon their health, and when obtained at high prices, they had to be instructed in every part of the process of water-rotting and preparing the hemp for market.

At the close of 1840, it seems his efforts had demonstrated the entire practicability of carrying on the process without serious detriment to health, and so complete was the change of public opinion on this point, founded in the actual experiments and the evidence of their own senses, that a great number of the most respectable planters entered into an agreement with him to furnish him with the water-rotted article, some engaging to furnish as much as 100 tons. These experiments, it appears, were commenced in Kentucky; this State, at that period, being the only one that cultivated this article to any considerable extent, (which, by the way, it may be stated, was of very inferior quality, and unfit for naval

purposes,) the annual production not exceeding 1,500 tons. The eminent success attending Mr. M.'s experiments was soon noised through the western States, as a result of which, the annual production in 1846 had increased to 30,000 tons. The first difficulty in subduing the prejudices of the people having been overcome, he produced, at great expense, and forwarded to Boston upwards of 200 tons of the article for the navy of the United States, and was prepared to fulfil his contract for 500 tons, which he would have done had he not been disabled and ruined by its improper, if not corrupt, rejection by the inspector. In regard to this, the testimony of Mr. Paulding, Commodore Nicholson, and others, seems conclusive. A great prejudice, at the time, existed against American hemp, such as from time to time, in very limited quantities, had been sent to the Boston market, from the fact of its having been badly prepared, and of very inferior quality of dew-rotted. This created a prejudice against the article when furnished by Myerle. But after its rejection, and its sacrifice, at ruinous prices, the manufacturers who purchased it, having proved its quality, the prejudices previously existing was overcome, and the production of American water-rotted hemp was established, and can never be abandoned. This great branch of American interest was thus established; the nation reaped the rich fruits of Mr. Myerle's skill, perseverance, energy, seven years' toil, losses and sacrifices; but he was entirely ruined (through the rejection of his hemp with also the neglect of his business) to establish it. In conferring this great benefit upon his country, he has saved to the government, in the difference between the price of Russian and American hemp, four times the amount of his claim, besides millions of dollars to the nation by the substitution of a domestic for a foreign article of indispensable necessity for the naval as well as the mercantile marine of our Union.

An extensive eastern manufacturer says: "If there were no hemp raised in the United States, it would be impossible to obtain a supply equal to our necessity, if all Europe were open to us. The American hemp is of a quality that answers all the purposes for which the Russian is used; and in regard to the power of bearing a dead strain it is much superior."

It is also known that there is a large demand for American hemp for manufacturing purposes, say for canvas, duck, and coarse fabrics; many factories for the manufacture of these articles have been established in this country since the year 1840, and our shipping is entirely clothed with the American production. Moreover, previous to the above time, the importation of Russian hemp amounted annually to 6,000 tons, whereas, in the year 1844 the importation had fallen off to a few hundred tons, in consequence of the introduction of American hemp. It cannot be questioned but that this state of prosperity was produced through the instrumentality of Mr. Myerle's efforts in behalf of this great American interest. We have also before us the fact that our government is now making their purchases of American water-rotted hemp for the use of the navy, at the price of $280 per ton, while at this time Russian hemp is quoted at $400 per ton in our market, and the quantity very limited. The consumption of hemp for our mercantile marine annually amounts to 15,000 tons, and nineteen-twentieths of the American hemp is used for one-twentieth of the Russian. The government requires annually from six to eight hundred tons for the navy. It also appears that Mr. Myerle not only established the mode of water-rotting, but also, that, through his instructions, the culture of hemp has been greatly improved in its quality; that large quantities of dew-rotted hemp command a market at remunerating prices to the producer in the eastern ports of our country; as well, also, large shipments are made to Europe.

What would be the condition of our country, as regards the supply of this article, (so essential to our navy and commercial marine, if we were depending on the foreign production,) in a state of war on our part with Europe, although Russia might stand towards us as a neutral power at such a time? It must be apparent to every mind that the Baltic would be closed against our commerce, and that if Russia attempted to furnish us with her production she would have to run the gauntlet; hemp being a contraband article, by the law of nations it would be subject to seizure and confiscation, and our supply would be entirely cut off. But look at the present state of things; we are beyond all fear of being thrown under this embarrassing position, as happened in the war of 1812, when there was no raw material to supply our navy and mercantile marine. From the facts set forth by the honorable senator from New Jersey, in his speech, we have come to the conclusion that Mr. Myerle has conferred a great benefit on his country, and

that it owes him a debt of gratitude, and especially a full remuneration for his losses and time spent in the prosecution of this enterprise; that, (for it is in proof that he has lost seventeen years of the prime of his life, including the time occupied in prosecuting his claim,) as up to this period he has not received one dollar remuneration for the great losses incurred by the rejection of his hemp, the destruction of his regular business, and his loss of property and time, it is also evident that if he had not engaged in the enterprise he would have been at this time a wealthy man.

We remark in closing that republics have been charged with being ungrateful, but that, although this is often the case, we shall hope, in the present instance, the observation of a late distinguished statesman, "Truth is mighty, and public justice is slow, but certain," will prove the more correct of the two assertions.

LATE BOOKS, EDITORIAL, ETC.

1. *Life in California.*—Mountains and Mole Hills, by Frank Marryatt, illustrated by the author; New York, Harper & Brothers, 1855. A most interesting work indeed. There are chapters entitled, Where the gold comes from—Bar Room in California—John Chinaman—The Feast of Lanterns—The Miner's grave—Horse auction at Sonora—Camping out—all very amusing, as are also the illustrations.

2. *Letters to the Right Reverend John Hughes*, Roman Catholic Bishop, enlarged and revised *by Kirwan*. Having gone through large editions in the United States, and reprints in Europe, and even in India, the work of Kirwan again appears from the press of Harper & Brothers, New York, (1855.)

3. *Speeches and addresses by Henry W. Hilliard:* New York, Harper & Brothers, 1855. A large part of these were delivered in Congress, of which Mr. Hilliard was a distinguished member from Alabama, and he has dedicated the whole, with many fine literary efforts, to the Hon. W. C. Preston, of South Carolina.

4. *Reports, Explorations and Surveys of a Railroad Route from the Mississippi river to the Pacific ocean*, made under the direction of the Secretary of War, 1853-'54, according to acts of Congress. We are indebted to Mr. Campbell, of the War office, for a copy, and will hereafter analyse it minutely.

5. *Catalogue of Patents granted by Patent Office prior to* 1855. We are indebted to the author, J. S. Brown, A. M., Washington, D. C., for a copy of this most laborious and valuable pamphlet.

6. *Speech of the Hon. P. A. Rost, of Louisiana:* A noble defence of religious toleration and of our institutions.

7. *Speech of Judge Gayarre, of Louisiana, to be delivered at the Know Nothing Convention of Philadelphia.* Judge Gayarrē being a Catholic was ruled out. In this printed speech he shows with great eloquence and power the evils of religious intoleration, and how the salvation of the country depends upon its freedom of thought and opinion. In our next number we shall publish an excellent review of Mr. Gayarré's History of Spanish Domination in Louisiana, written by Mann Butler, of Missouri. It is too late for this number.

☞ *Subscribers will read remarks on fourth page of Cover.*

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